ACCESSION SHEET
Maine Folklife Center

Accession Number: 0768

Accession Date:

Collection Number: MF 047

Collection Name: Penobscot Bay Fisheries and Industries Project

T# 0621, 0622, 0623, 0624 **C#**

P# 0412, 0413, 0414 **S#** **V#**

PMA#

DAT

CD# 0869, 0870, 0872, 0873

DVD# mfc_na0768_t0621_01, mfc_na0768_t0621_02, mfc_na0768_t0622_01, mfc_na0768_t0622_02

Interviewer/Depositor: David Taylor

Narrator: Ernest Maloney

Description: **0768 Ernest Maloney,** interviewed by David Taylor, July 16, 1973 and January 3, 1974, at Maloney's home in Port Clyde, Maine. Penobscot Bay Fisheries and Industries Project, Penobscot Marine Museum.

July 16, 1973: Maloney discusses lobstering; lobster fishing licenses; clamming and clam factories; marketing lobsters; lobster boat engines; vessels used for lobstering, sail and power; dory and pea pod boats; trawling; seiners, including Bert Simmons; boundary maintenance; trap wars; living and fishing on islands; trap design and materials, ballast, bait, and buoys; winter fishing; and fishing expenses.

January 3, 1974: Maloney talks about dory and sloop use; lobstering off Monhegan; sail versus power boats; Friendship sloops; overnighting on the sloop; maintenance of sloop and sails; two-header and three-header traps; building traps; Albion, Charles, Jonah, and Wilbur Morse who built sloops; size limits on lobsters; marketing lobsters; smacks came from Boston and Maine to buy lobsters.

Text: 10 pp. index, 15 pp. transcript
Recordings: **T 0621 - T 0624 / CD 0869 - CD 0870, CD 0872 - CD 0873** 3 hours
Photos: **P 0412 - P 0414**

Related Collections & Accessions

Restrictions none

ACCESSION SHEET
Maine Folklife Center

Accession Number: 0773

Accession Date: 1976.07.28 **T#** 0637, 0638, 0639, 0640 **C#** **P M #** **D A T** **CD #** 0884, 2051, 0885, 0886

Collection Number: MF 047/ MF 009

Collection Name: Penobscot Bay Fisheries and Industries Project/

P # 0410, 0411 **S #** **V #** **D V #** **D A #** mfc_na0773_t0637_01, mfc_na0773_t0637_02, mfc_na0773_t0638_01, mfc_na0773_t0638_02

Interviewer /Depositor: David Taylor

Narrator: Gooden Grant

Description: **0773 Gooden Grant,** interviewed by David Taylor, July 11, and August 10, 1973, Stonington, Maine.

July 11, 1973: Grant discusses catching lobsters with hoop nets and traps; Isle au Haut lobster factory; selling to lobster smacks; mackerel seineing; culling board and sizes of marketable lobsters; pogey fishing with father; steam trawlers in pogey fishery; running lobster smacks for McLoon Lobster Co.; Friendship sloops; farms on Isle au Haut; dory factory at Bucksport; Tom Nickerson; fishing the Grand Banks; gear and techniques for trawling from a dory; salting fish on board schooner; power boats; liquor and drinking; going to the West Indies in square riggers. Grant was in Havana harbor for the sinking of the battleship Maine, which began the Spanish-American war.

August 10, 1973: Grant discusses camp meetings; life on Isle au Haut including father's store, lobster factory, shipyard, and rusticators; Friendship sloops; early lobster traps; cooperation among Isle au Haut fishermen; winter fishing; lobster bottoms; singing and dancing aboard ship; and rum running.

Text: 18 pp. index
Recordings: **T 0637 (**1 hour**), T 0638 (**1 hour**), T 0639 (**1 hour**), T 0640 (**30 minutes**), CD 0884 - CD 0886, CD 2051** 3.5 hours
Photos: **P 0410 - P 0411**

Related Collections & Accessions

Restrictions

ACCESSION SHEET
Maine Folklife Center

Accession Number: 0899

Accession Date: 1974.06.00 **T#** 0868 **C#** **PM#** **DAT** **CD#**

Collection Number: MF 037

Collection Name: "Life of the Maine Lobsterman" project interviews **P#** **S#** **V#** **DVD#** **DA#** mfc_na0899_t0868_01

Interviewer /Depositor: David Taylor

Narrator: Al Roberts

Description: **0899 Al Roberts,** interviewed by David Littleton-Taylor, July 1, 1974, at Robert's home in Friendship, Maine. Roberts talks about how he became a lobster buyer at the age of 34; explains the difference between a dealer and a buyer; what the buyer's goals are for making money; what the buyer provides for the fisherman: a wharf, parking lot for vehicles, place to leave skiffs, build and repair traps, paint, bait, gas; providing quality service for fisherman; the relationship between buyer and fisherman; lending money; history of the Friendship Sloops in Maine, startup costs for lobstermen; a year's activities; and the future of the industry. Recording is in *English*.

Text: 5 pp. detailed index
Recording: **T 0868** 1/2 hour

Related Collections & Accessions

Restrictions

ACCESSION SHEET
Maine Folklife Center

Accession Number: 0915

Accession Date: 1974.12.00 **T#** 0889, 0890, **C#** 0891

P M # **D A T** **CD #**

Collection Number: MF 081

Collection Name: Lynn Franklin Collection

P # **S #** **V #** **D V #**

D A # mfc_na0915_t0889_01, mfc_na0915_t0889_02, mfc_na0915_t0890_01, mfc_na0915_t0890_02

Interviewer /Depositor: Lynn Franklin

Narrator: Phil Nichols

Description: **0915 Phil Nichols,** interviewed by Lynn Franklin, September 7, 1974, in Round Pond, Maine. Nichols, age 80, talks about building Friendship Sloop boats, starting in 1926: his first shop; changing to Friendship and Norwegian sloops (from Cats); working as a draftsman for Hyde Windlass Company; joining the Friendship Sloop Society; old-fashioned boat making; screws vs nails; his work during WWI; baseball games (locals vs. summer folk); the type of wood used for his ships; Wilbur Morse; different boat models; his shop; how he developed his own models (based on Morse's); details about boat construction; the differences between then and now (both in life and boat building); parts used; tools used; naming of his boats; how costs have changed. Recording is in *English*.

Text: 21 pp. detailed index
Recording: **mfc_na0915_t0889_01&02, mfc_na0915_t0890_01&02, mfc_na0915_t0891_01** 147 minutes

Related Collections & Accessions

Restrictions

ACCESSION SHEET
Maine Folklife Center

Accession Number: 0943

Accession Date: 1972.05.00 **T#** 0939, 0940 **C#**

P M # **D A T** **CD #**

Collection Number: MF 081

Collection Name: Lynn Franklin Collection

P #	**S #**	**V #**	**D V #**	**D A #**
				mfc_na0943_t0939_01, mfc_na0943_t0939_02, mfc_na0943_t0940_01

Interviewer /Depositor: Lynn Franklin

Narrator: Gooden Grant

Description: **0943 Gooden Grant** interviewed by Lynn Franklin, February 22, 1972, Archie Hutchinson's home in Stonington, Maine. Grant, age 96, talks about his life as a lobster fisherman and life on Isle Au Haut: his relatives' origin and their activities with different places in the state; Knowlton's generations; starting lobstering as a child; how companies did not take into account preserving the fishing business; lack of profit in lobstering; how fishing customs have changed; owning Friendship sloops built by Wilbur Morse; why lobsters were bigger some years ago; why Indians used to kill gulls during the summer; Indian customs and business; Gilman Merchant starting the great fire on Isle Au Haut; different sorts of boats. Recording is in *English*.

Text: 15 pp. catalog
Recording: **mfc_na0943_t0939_01, mfc_na0943_t0939_02, mfc_na0943_t0940_01** 77 minutes

Related Collections & Accessions

Restrictions

ACCESSION SHEET
Maine Folklife Center

Accession Number: 0974

Accession Date: 1974.06.00 **T#** 0974 **C#** **PM#** **DAT** **CD#**

Collection Number: MF 037

Collection Name: "Life of the Maine Lobsterman" project interviews

P# **S#** **V#** **DVD#** **DA#** mfc_na0974_t0974_01

Interviewer /Depositor: David Littleton-Taylor

Narrator: Harold Finnemore

Description: **0974 Harold Finnemore,** interviewed by David Taylor, summer 1974, Islesford, Maine. Finnemore, a part-time lobster fisherman, talks about lobster fishing: building of lobstering traps; lost traps; old fisher: Atwood Gilmore; different kind of fishes; lobster buyer Lee Ham; how to build a weir; fishing territory; drunk fishing stories; places for fishing and lobstering; fishing boats prices; Friendship sloop; fishing at night. Recording is in *English*.

Text: 11 pp. catalog
Recording**: mfc_na0974_t0974_01** 66 minutes

Related Collections & Accessions

Restrictions

ACCESSION SHEET
Maine Folklife Center

Accession Number: 1499

Accession Date: 1979.02.16 **T#** 1602 **C#** **PM#** **DAT** **CD#**

Collection Number: MF 035

Collection Name: Maine Folklife Survey

P#	S#	V#	DV#	DA#

Interviewer /Depositor: Richard Lunt

Narrator: Henry Barnes

Description: **1499 Henry Barnes,** interviewed by Richard Lunt, February 16, 1979, South Harpswell, Maine. Two page index. Barnes discusses boat building; other boat builders on Beals Island; Portland, Kennebunk; Hampton boats; fishing from sail boats; Friendship sloops; engines, including "make-or-break" models; skiffs and dories; lumber used; construction techniques; and yachts. Done for the Maine Maritime Museum. **RESTRICTED.**

Text: 3 pp. brief index
Recording: **T 1602**

Related Collections & Accessions

Restrictions RESTRICTED

x

ACCESSION SHEET
Maine Folklife Center

Accession Number: 1501

Accession Date: 1979.02.20 **T#** 1604 **C#** **P M #** **D A T** **CD #**

Collection Number: MF 035

Collection Name: Maine Folklife Survey

P #	S #	V #	D V #	D A #

Interviewer /Depositor: Richard Lunt

Narrator: Phil Nichols

Description: **1501 Phil Nichols,** interviewed by Richard Lunt, February 20, 1979, Round Pond, Maine. Three page index. Nichols discusses Muscongus Bay sloops; differences between Muscongus and Friendship and Searsport sloops; career building sloops 1890s - 1930s; ballast; lobster smacks; construction of centerboard sloops; transition from sails to engines in Friendship sloops; fishing and lobstering with both types of sloop; making lobster traps; marketing lobster; design and construction details of Friendship sloops; fiberglass; and other boat builders in his area. Done for the Maine Maritime Museum. **RESTRICTED.**

Text: 4 pp. brief index
Recording: **T 1604**

Related Collections & Accessions

Restrictions RESTRICTED

x

ACCESSION SHEET
Maine Folklife Center

Accession Number: 1507

Accession Date: 1979.03.25 **T#** 1610 **C#** **P M #** **D A T** **CD #**

Collection Number: MF 035

Collection Name: Maine Folklife Survey

P #	**S #**	**V #**	**D V #**	**D A #**

Interviewer /Depositor: Richard Lunt

Narrator: Riley Beal

Description: **1507 Riley Beal,** interviewed by Richard Lunt, March 25, 1979, Beals Island, Maine. Two page index. Beal discusses Friendship sloops; torpedo stern vs. rounded stern boats; size of lobster boats; his career as a boat builder; other boat builders on Beals Island; Red Wing and Thoroughbred engines; changes in boat models over time; experiences as a fisherman, trawling and handling; herring fishing; peapods and reach boats; early motors and their influence on boat design. Done for the Maine Maritime Museum. **RESTRICTED.**

Text: 3 pp. brief index
Recording: **T 1610**

Related Collections & Accessions

Restrictions RESTRICTED

X

ACCESSION SHEET
Maine Folklife Center

Accession Number: 2620

Accession Date: 1999.10.14 **T#** **C#** 1891, 1892, 1893, 1894, 1895, 1896, **P** # **M** # **D A T** **CD** #

Collection Number: MF 116

Collection Name: Jameson Family Collection

P	S	V	D
#	#	#	V #

DA mfc_na2620_c1891_01, mfc_na2620_c1891_02, mfc_na2620_c1892_01, mfc_na2620_c1892_02

Interviewer /Depositor: Ellen Jameson, William Jameson

Narrator: various Jameson family members and residents of Waldoboro

Description: **2620 Various Jameson family members and residents of Waldoboro,** recorded by William Jameson, 1960s - 1970s, Thomaston, Friendship, and Waldoboro, Maine, donated by Ellen Jameson. Thirteen interviews with various family members and residents of the Waldoboro area, recorded for the most part by W. Jameson during the 1960s and 1970s. Interviews focus mostly on the history of Waldoboro and South Waldoboro; the community of Friendship (Long Island) Maine; Friendship sloop and boat building; woods work in the Allagash region, Grand Isle. Archive originals are cassette copies made from depositor's original reels loaned in July, 1998. Also included are photocopies of original tape reel boxes. **RESTRICTED:** Tapes C 1897 & C 1898 are closed to public access as these contain personal family information.

Recording: **mfc_na2620_c1891_01 - mfc_na2620_c1904_01** 674 minutes **(**11.25 hours)

mfc_na2620_c1891_01&02. Interview with Lawrence Weston at his home in Waldoboro, Maine. Reminiscences of Waldoboro, and aspects of Mr. Weston's life.

mfc_na2620_c1892_01&02. Interview with Archie Benner at his home in Waldoboro, Maine, June 4, 1971. Discussing Jasper Stahl's book, The History of Waldoboro.

mfc_na2620_c1893_01. Interview with Elmer Orff

mfc_na2620_c1894_01&02. Interview with John Sears at his home in North Waldoboro, Maine about the history of Waldoboro, Maine. Recorded Labor Day, 1971.

mfc_na2620_c1895_01&02. Interview with Charles Murphy at his home in Friendship, Maine, November 17, 1968. On Friendship sloop and boatbuilding.

Related Collections & Accessions

Restrictions x **RESTRICTED:** Depositor's Tapes 7 and 8 (C 1897 and C 1898) are not to be made available to researchers as these contain personal family information. Other materials are

ACCESSION SHEET
Maine Folklife Center

Accession Number: 2958

Accession Date: 1970.01.20 **T#** 0314 **C#** **PM#** **DAT** **CD#**

Collection Number: MF 082

Collection Name: C. Richard K. Lunt Collection (Boat Builders) **P#** **S#** **V#** **DVD#** **DAT#** mfc_na2958_t0314_01

Interviewer /Depositor: C. Richard K. Lunt

Narrator: Ralph Stanley

Description: **2958 Ralph Stanley,** interviewed by C. Richard K. Lunt, January 20, 1970, Bernard, Maine. Stanley talks about boat models (types) 1910s; design changes that resulted from use of motors; Friendship sloops; his lifetime of building lobster boats and Friendship sloops, post -1950; desirable design and performance characteristics for a lobster boat; economics of running a boat and boat construction; changes in lobster boat design over time; fiberglass; techniques of building boat models and materials used; and the process of drafting boat designs. Also discusses photographs not included in accession.

Text: 41 pp. transcript (2 copies of the transcript-82 pp. total-, the first has edits made by Stanley 4.24.2015).
Recording: **mfc_na2958_t0314_01** 90 minutes

Related Collections & Accessions

Restrictions

ACCESSION SHEET
Maine Folklife Center

Accession Number: 2959

Accession Date: 1970.03.18 **T#** 0315 **C#** **PM#** **DAT** **CD#**

Collection Number: MF 082

Collection Name: C. Richard K. Lunt Collection (Boat Builders)

P# **S#** **V#** **DV#** **DA#** mfc_na2959_t0315_01, mfc_na2959_t0315_02

Interviewer /Depositor: C. Richard K. Lunt

Narrator: James E. Beal

Description: **2959 James E. Beal,** interviewed by C. Richard K. Lunt, March 18, 1970, Jonesport, Maine. Beal, born in 1887, talks about wooden ship building in New Hampshire; lobstering in a Friendship sloop; early boat engines; early motor-powered lobster boats; eel grass; purse seining for herring and sardines; cross-handed row boats for lobstermen and college competitions; yawl boats; sardine factories (canneries); herring fishing, scaling, salting, and smoking; long-lining for fish; evolution of stern types in lobster boats; and monk fish. Also discusses photographs and maps not included in accession.

Text: 38 pp. transcript
Recording: **mfc_na2959_t0315_01, mfc_na2959_t0315_02** 129 minutes

Related Collections & Accessions

Restrictions

ACCESSION SHEET
Maine Folklife Center

Accession Number: 3288

Accession Date: 2006.06.22 **T#** **C#** 2430 **PM#** **DAT** **CD#** 2217

Collection Number: MF 157

Collection Name: Brooklin Boat Building (2003-2004) Collection

P# **S#** **V#** **DV#** **DA#** mfc_na3288_c2430_01

Interviewer/Depositor: Pauleena MacDougall

Narrator: Eric Dow

Description: **3288 Eric Dow,** interviewed by Pauleena MacDougall on March 2, 2004, in Dow's shop in Brooklin, Maine. Dow talks about boat building in Brooklin, Maine; learning boat building at the Marine Trade Center in Lubec, Maine; instructors Doug Dodge and Ernie Bryerly; building power lobster boats; teaching model design; wooden boat builders on Beal's Island; friendship sloops; boat builder Tony Diess of Rhode Island; the Day family; wooden and fiberglass peapod boat building; Joel White of the Brooklin Boatyard and the Herrschoff design; boat building methods; effect of Woodenboat magazine; boat building in school; women and boat building; carpentry; the aesthetics of boat building; his son; his lobsterman father; marketing; his employees; wooden and fiberglass boats; cold molds; wooden boat repairs; peapod boat designs.

Recordings: **mfc_na3288_c2430_01** 48 minutes

Related Collections & Accessions Richard Lunt/Boat Builders

Restrictions none

ACCESSION SHEET
Maine Folklife Center

Accession Number: 0768

Accession Date:

Collection Number: MF 047

Collection Name: Penobscot Bay Fisheries and Industries Project

T# 0621, 0622, 0623, 0624 **C#**

P# 0412, 0413, 0414 **S#** **V#**

PMA#

DAT

CD# 0869, 0870, 0872, 0873

DVD# mfc_na0768_t0621_01, mfc_na0768_t0621_02, mfc_na0768_t0622_01, mfc_na0768_t0622_02

Interviewer/Depositor: David Taylor

Narrator: Ernest Maloney

Description: **0768 Ernest Maloney,** interviewed by David Taylor, July 16, 1973 and January 3, 1974, at Maloney's home in Port Clyde, Maine. Penobscot Bay Fisheries and Industries Project, Penobscot Marine Museum.

July 16, 1973: Maloney discusses lobstering; lobster fishing licenses; clamming and clam factories; marketing lobsters; lobster boat engines; vessels used for lobstering, sail and power; dory and pea pod boats; trawling; seiners, including Bert Simmons; boundary maintenance; trap wars; living and fishing on islands; trap design and materials, ballast, bait, and buoys; winter fishing; and fishing expenses.

January 3, 1974: Maloney talks about dory and sloop use; lobstering off Monhegan; sail versus power boats; Friendship sloops; overnighting on the sloop; maintenance of sloop and sails; two-header and three-header traps; building traps; Albion, Charles, Jonah, and Wilbur Morse who built sloops; size limits on lobsters; marketing lobsters; smacks came from Boston and Maine to buy lobsters.

Text: 10 pp. index, 15 pp. transcript
Recordings: **T 0621 - T 0624 / CD 0869 - CD 0870, CD 0872 - CD 0873** 3 hours
Photos: **P 0412 - P 0414**

Related Collections & Accessions

Restrictions none

ACCESSION SHEET
Maine Folklife Center

Accession Number: 0773

Accession Date: 1976.07.28 **T#** 0637, 0638, 0639, 0640 **C#** **P M #** **D A T** **CD #** 0884, 2051, 0885, 0886

Collection Number: MF 047/ MF 009

Collection Name: Penobscot Bay Fisheries and Industries Project/

P # 0410, 0411 **S #** **V #** **D V #** **D A #** mfc_na0773_t0637_01, mfc_na0773_t0637_02, mfc_na0773_t0638_01, mfc_na0773_t0638_02

Interviewer /Depositor: David Taylor

Narrator: Gooden Grant

Description: **0773 Gooden Grant,** interviewed by David Taylor, July 11, and August 10, 1973, Stonington, Maine.

July 11, 1973: Grant discusses catching lobsters with hoop nets and traps; Isle au Haut lobster factory; selling to lobster smacks; mackerel seineing; culling board and sizes of marketable lobsters; pogey fishing with father; steam trawlers in pogey fishery; running lobster smacks for McLoon Lobster Co.; Friendship sloops; farms on Isle au Haut; dory factory at Bucksport; Tom Nickerson; fishing the Grand Banks; gear and techniques for trawling from a dory; salting fish on board schooner; power boats; liquor and drinking; going to the West Indies in square riggers. Grant was in Havana harbor for the sinking of the battleship Maine, which began the Spanish-American war.

August 10, 1973: Grant discusses camp meetings; life on Isle au Haut including father's store, lobster factory, shipyard, and rusticators; Friendship sloops; early lobster traps; cooperation among Isle au Haut fishermen; winter fishing; lobster bottoms; singing and dancing aboard ship; and rum running.

Text: 18 pp. index
Recordings: **T 0637 (**1 hour**), T 0638 (**1 hour**), T 0639 (**1 hour**), T 0640 (**30 minutes**), CD 0884 - CD 0886, CD 2051** 3.5 hours
Photos: **P 0410 - P 0411**

Related Collections & Accessions

Restrictions

ACCESSION SHEET
Maine Folklife Center

Accession Number: 0899

Accession Date: **T#** **C#** **PM#** **DAT** **CD#**

Collection Number:

Collection Name: "Life of the Maine Lobsterman" project interviews

PS# **SV#** **DVD#** **DAD#**

Interviewer /Depositor:

Narrator:

Description: **0899 Al Roberts,** interviewed by David Littleton-Taylor, July 1, 1974, at Robert's home in Friendship, Maine. Roberts talks about how he became a lobster buyer at the age of 34; explains the difference between a dealer and a buyer; what the buyer's goals are for making money; what the buyer provides for the fisherman: a wharf, parking lot for vehicles, place to leave skiffs, build and repair traps, paint, bait, gas; providing quality service for fisherman; the relationship between buyer and fisherman; lending money; history of the Friendship Sloops in Maine, startup costs for lobstermen; a year's activities; and the future of the industry. Recording is in *English*.

Text: 5 pp. detailed index
Recording: **T 0868** 1/2 hour

Related Collections & Accessions

Restrictions

ACCESSION SHEET
Maine Folklife Center

Accession Number: 0974

Accession Date:

T#	C#	P M #	D A T	CD #

Collection Number:

P #	S #	V #	D V #	D A #

Collection Name: "Life of the Maine Lobsterman" project interviews

Interviewer /Depositor:

Narrator:

Description: **0974 Harold Finnemore,** interviewed by David Taylor, summer 1974, Islesford, Maine. Finnemore, a part-time lobster fisherman, talks about lobster fishing: building of lobstering traps; lost traps; old fisher: Atwood Gilmore; different kind of fishes; lobster buyer Lee Ham; how to build a weir; fishing territory; drunk fishing stories; places for fishing and lobstering; fishing boats prices; Friendship sloop; fishing at night. Recording is in *English*.

Text: 11 pp. catalog
Recording**: mfc_na0974_t0974_01** 66 minutes

Related Collections & Accessions

Restrictions

MF 037 **"Life of the Maine Lobsterman" project interviews**

Note: Accessions NA 747 - NA 750 were at one time designated as the "Lobsterman's Life Project" while the other accessions in this collection were designated as the "Life of the Maine Lobsterman project." In September, 1999, for the sake of clarity, and since the interviews were done roughly around the same years, I assigned all of the following accessions to a single collection called the "Life of the Maine Lobsterman Project Interviews." --Steve Green

747 Lafond, Mark. (FO 197) Spring 1973. Maine: Winter Harbor. 177 pp. Tape: 2 hrs. w/ brief cat. & trans. Interviews with Dale Torrey. [Life of the Maine Lobsterman Project] **T569 —T573**

748 Elwell, Becky. (FO 197) Spring 1973. Maine: Lincolnville. 88 pp. Tape: 2 hrs. w/ brief cat. & trans. Interviews with Frank Dyer. [Life of the Maine Lobsterman Project] **T574 — T576**

749 Lello, Jayne. (FO 197) Spring 1973. Maine: Tenant's Harbor, Port Clyde. 177 pp. Tape: 3 hrs. w/ brief cat. & trans. Interviews with Sherwood Cook, lobster fisherman; Ernest Maloney, fisherman; Holace Chadwick, lobster fisherman. [Life of the Maine Lobsterman Project] **T577 — T581**

750 Rawding, Faith A. (FO 107 & 197) 1973. Maine: Long Island and Casco Bay. 295 pp. Tape: 4 hrs. w/ brief cat. & trans. Interviews with Joe and Evelyn Horr, Leon and Leila Horr about lobster fishing, fishing, clamming, trawling, sword fishing, shad fishing, and the Seventh Day Adventist Church; photos, **P442—P444**. [Life of the Maine Lobsterman Project] **T582 — T589**

897 Taylor, David. Summer 1974. Maine: Swan's Island. 28 pp. Tape: 1 hr. w/ brief cat. & trans. Interview with Tim Staples, lobster fisherman, about learning where to set traps, equipment used, costs, money management, territoriality, opinions on laws, trap limits, closed season, etc. Life of the Maine Lobsterman Project. **T866**

898 Taylor, David. Fall 1974. Maine: Monhegan Island. 25 pp. Tape: 1/2 hr. w/ brief cat. & trans. Interview with Sherm Stanley, Jr. about lobster fishing, types of boats, gear, costs, traps, co—ops, laws, etc. Life of the Maine Lobsterman Project. **T867**

899 Taylor, David. Summer 1974. Maine: Friendship. 9 pp. Tape: 1/2 hr. w/ brief cat. Interview with Al Roberts about lobster buying and Friendship Sloops--when built, distinctive features, number still in existence. [Life of the Maine Lobsterman Project] **T868**

970 Taylor, David. Summer 1974. Maine: Stonington. 10 pp. Tape: 1 hr. w/ brief cat. Interview with Andy Gove about experiences as a lobster fisherman. [Life of the Maine Lobsterman Project] **T970**

971 Taylor, David. Summer 1974. Maine: Lincolnville. 10 pp. Tape: 1 hr. w/ brief cat. Interview with Joe Charczynski about worming and lobster fishing. [Life of the Maine Lobsterman Project] **T971**

972 Taylor, David. Summer 1974. Maine: Beals. 7 pp. Tape: 1/2 hr. w/ brief cat. Interview with Ralph Alley about lobster fishing. [Life of the Maine Lobsterman Project] **T972**

973 Taylor, David. Summer 1974. Maine: Kennebunkport. 14 pp. Tape: 1 hr. w/ brief cat. Interview with Stillman Griffin about lobster fishing. [Life of the Maine Lobsterman Project] **T973**

974 Taylor, David. Summer 1974. Maine: Islesford. 15 pp. Tape: 1 hr. w/ cat. Interview with Harold Finnemore about lobster fishing. [Life of the Maine Lobsterman Project] **T974**

975 Taylor, David. Summer 1974. Maine: New Harbor. 12 pp. Tape: 1 hr. w/ cat. Interview

with Edgar Drisco about lobster fishing. [Life of the Maine Lobsterman Project] **T975**

982 Taylor, David. Summer 1974. Maine: Kittery. 45 pp. No Tape. Brief cat. & trans. Interview with Lyman "Gus" Alley about his experiences as a lobsterman. [Life of the Maine Lobsterman Project] **[982.1]**

1996 Taylor, David. Summer 1974. Maine: Friendship. 3 pp. Tape: 1/2 hr. approx. Interview with Stillman Havener about lobstering. [Life of the Maine Lobsterman Project] **T1963**

2005 Taylor, David. Fall 1974. Maine: Rockland. 3 pp. Tape: 1 hr. Interview with Les Dyer of Vinalhaven and Rockland, Maine concerning the founding of the Maine Lobstermen's Association. Dyer was the first president of the MLA. [Life of the Maine Lobsterman Project] **T1969**

[MF 637]

Project series: MAINE LOBSTERMAN INTERVIEWS

Total number of accessions: 2

Accessions included:

897; 898

B1009023 Last updated: 07-19-93 Created: 02-25-93 Revision: 7

01 LANG: eng 03 ARCHIVE: onea 05 BIB LVL: - 07 BCODE3: -
02 SKIP: 0 04 CAT D: 02-25-93 06 MAT TYPE: - 08 COUNTRY:
09 INSTITUTIONUniversity of Maine, Orono
10 ACCESSION #na897
11 NAME Taylor, David, collector
12 TITLE [Maine lobsterman interview], Summer 1974
13 PHYS DESC 1 item, (28p.)
14 PHYS DESC 1 audiotape reel (1 hr.)
15 NOTE Materials located in: Northeast Archives of Folklore and Oral History, Maine Folklife Center, University of Maine, Orono
16 NOTE Independent collection of folklore material, contributed to the Archives. Audiotape reference number is T866.
17 SUBJECT Lobstermen
18 SUBJECT Islands --Maine
19 LOCAL SUBJ Lobstering
20 LOCAL SUBJ Coastal stories
21 LOCAL SUBJ Fishing industry
22 LOCAL SUBJ Lobster boats
23 LOCAL SUBJ Lobster traps
24 GENRE Interviews aat
25 GENRE Independent fieldwork
26 ADD AUTHOR Staples, Tim, informant
27 GEOGRAPHIC United States Maine Hancock County Swan's Island
28 SUMMARY Contains interview with Tim Staples, lobster fisherman, about learning where to set traps, equipment used, costs, money management, territoriality, opinions on laws, trap limits, closed season, etc. (Life of the Maine Lobsterman Project.)
29 ACCESS No restrictions on access.
30 ACCESS Archival materials accessed through user request to staff. Photocopy service available at nominal fee. Information on literary rights available in the Archives.
31 FIND AIDS Subject, place-name and personal-name indexes available in the Archives.
32 MARC meu
33 MARC eng

B1009035 Last updated: 07-19-93 Created: 02-25-93 Revision: 6

01 LANG: eng 03 ARCHIVE: onea 05 BIB LVL: - 07 BCODE3: -
02 SKIP: 0 04 CAT D: 02-25-93 06 MAT TYPE: - 08 COUNTRY:
09 INSTITUTIONUniversity of Maine, Orono
10 ACCESSION #na898
11 NAME Taylor, David, collector
12 TITLE [Maine lobsterman interview], Fall 1974
13 PHYS DESC 1 item, (25p.)
14 PHYS DESC 1 audiotape reel (0.5 hr.)
15 NOTE Materials located in: Northeast Archives of Folklore and Oral History, Maine Folklife Center, University of Maine, Orono
16 NOTE Independent collection of folklore material, contributed to the Archives. Audiotape reference number is T867.
17 SUBJECT Islands --Maine
18 SUBJECT Lobstermen
19 LOCAL SUBJ Lobstering
20 LOCAL SUBJ Coastal stories
21 LOCAL SUBJ Fishing industry
22 LOCAL SUBJ Lobster boats
23 LOCAL SUBJ Lobster traps
24 GENRE Interviews aat
25 GENRE Independent fieldwork
26 ADD AUTHOR Stanley, Sherm, informant
27 GEOGRAPHIC United States Maine Monhegan Island
28 SUMMARY Contains interview with Sherm Stanley, Jr. about lobster fishing, types of boats, gear, costs, traps, co-ops, laws, etc. (Life of the Maine Lobsterman Project.)
29 ACCESS No restrictions on access.
30 ACCESS Archival materials accessed through user request to staff. Photocopy service available at nominal fee. Information on literary rights available in the Archives.
31 FIND AIDS Subject, place-name and personal-name indexes available in the Archives.
32 MARC meu
33 MARC eng

[MF 037]

Project series: LOBSTERMAN'S LIFE INTERVIEWS

Total number of accessions: 4

Accessions included:

747; 748; 749; 750

[MF037]

B1007555 Last updated: 07-14-93 Created: 02-19-93 Revision: 6

01 LANG: eng	03 ARCHIVE: onea	05 BIB LVL: -	07 BCODE3: -
02 SKIP: 0	04 CAT D: 02-19-93	06 MAT TYPE: -	08 COUNTRY:

09 INSTITUTIONUniversity of Maine, Orono
10 SHELFLIST #F0197/Sp73
11 ACCESSION #na747
12 NAME LaFond, Mark, collector
13 TITLE [Lobsterman's life interviews], 1973
14 PHYS DESC 1 item, (177p.)
15 PHYS DESC 5 audiotape reels (2 hrs.)
16 NOTE Materials located in: Northeast Archives of Folklore and Oral History, Maine Folklife Center, University of Maine, Orono
17 NOTE Completed for UMO course: Folklore 197, Spring Semester 1973. Audiotape reference numbers are T569-T573.
18 SUBJECT Lobstermen
19 LOCAL SUBJ Lobstering
20 LOCAL SUBJ Community life
21 LOCAL SUBJ Fishing industry
22 GENRE Student fieldwork
23 GENRE Interviews aat
24 ADD AUTHOR Torrey, Dale, informant
25 GEOGRAPHIC United States Maine Hancock County Winter Harbor
26 SUMMARY Contains interviews with Dale Torrey. (Lobsterman's Life Project.)
27 ACCESS No restrictions on access.
28 ACCESS Archival materials accessed through user request to staff. Photocopy service available at nominal fee. Information on literary rights available in the Archives.
29 FIND AIDS Subject, place-name and personal-name indexes available in the Archives.
30 MARC meu
31 MARC eng

B1007567 Last updated: 07-14-93 Created: 02-19-93 Revision: 6

01 LANG: eng 03 ARCHIVE: onea 05 BIB LVL: - 07 BCODE3: -
02 SKIP: 0 04 CAT D: 02-19-93 06 MAT TYPE: - 08 COUNTRY:
09 INSTITUTIONUniversity of Maine, Orono
10 SHELFLIST #F0197/Sp73
11 ACCESSION #na748
12 NAME Elwell, Becky, collector
13 TITLE [Lobsterman's life interviews], 1973
14 PHYS DESC 1 item, (88p.)
15 PHYS DESC 3 audiotape reels (2 hrs.)
16 NOTE Materials located in: Northeast Archives of Folklore and Oral History, Maine Folklife Center, University of Maine, Orono
17 NOTE Completed for UMO course: Folklore 197, Spring Semester 1973. Audiotape reference numbers are T574-T576.
18 SUBJECT Lobstermen
19 LOCAL SUBJ Lobstering
20 LOCAL SUBJ Community life
21 LOCAL SUBJ Fishing industry
22 GENRE Student fieldwork
23 GENRE Interviews aat
24 ADD AUTHOR Dyer, Frank, informant
25 GEOGRAPHIC United States Maine Waldo County Lincolnville
26 SUMMARY Contains interviews with Frank Dyer. (Lobsterman's Life Project.)
27 ACCESS No restrictions on access.
28 ACCESS Archival materials accessed through user request to staff. Photocopy service available at nominal fee. Information on literary rights available in the Archives.
29 FIND AIDS Subject, place-name and personal-name indexes available in the Archives.
30 MARC meu
31 MARC eng

B1007579 Last updated: 07-14-93 Created: 02-19-93 Revision: 5

01 LANG: eng 03 ARCHIVE: onea 05 BIB LVL: - 07 BCODE3: -
02 SKIP: 0 04 CAT D: 02-19-93 06 MAT TYPE: - 08 COUNTRY:
09 INSTITUTIONUniversity of Maine, Orono
10 SHELFLIST #F0197/Sp73
11 ACCESSION #na749
12 NAME Lello, Jayne, collector
13 TITLE [Lobsterman's life interviews], 1973
14 PHYS DESC 1 item, (177p.)
15 PHYS DESC 5 audiotape reels (3 hrs.)
16 NOTE Materials located in: Northeast Archives of Folklore and Oral History, Maine Folklife Center, University of Maine, Orono
17 NOTE Completed for UMO course: Folklore 197, Spring Semester 1973. Audiotape reference numbers are T577-T581.
18 SUBJECT Lobstermen
19 LOCAL SUBJ Lobstering
20 LOCAL SUBJ Community life
21 LOCAL SUBJ Fishing industry
22 GENRE Student fieldwork
23 GENRE Interviews aat
24 GENRE Biographies aat
25 ADD AUTHOR Cook, Sherwood, informant
26 ADD AUTHOR Maloney, Ernest, informant
27 ADD AUTHOR Chadwick, Holace, informant
28 GEOGRAPHIC United States Maine Knox County Port Clyde
29 GEOGRAPHIC United States Maine Knox County Tenant's Harbor
30 SUMMARY Contains interviews with: Sherwood Cook, lobster fisherman; Ernest Maloney, fisherman; Holace Chadwick, lobster fisherman. (Lobsterman's Life Project.)
31 ACCESS No restrictions on access.
32 ACCESS Archival materials accessed through user request to staff. Photocopy service available at nominal fee. Information on literary rights available in the Archives.
33 FIND AIDS Subject, place-name and personal-name indexes available in the Archives.
34 MARC meu
35 MARC eng

B1007580 Last updated: 07-14-93 Created: 02-19-93 Revision: 7

01 LANG: eng 03 ARCHIVE: onea 05 BIB LVL: - 07 BCODE3: -
02 SKIP: 0 04 CAT D: 02-19-93 06 MAT TYPE: - 08 COUNTRY:
09 INSTITUTIONUniversity of Maine, Orono
10 SHELFLIST #F0107/1973
11 ACCESSION #na750
12 NAME Rawding, Faith A., collector
13 TITLE [Lobsterman's life interviews], 1973
14 PHYS DESC 1 item, (295p.)
15 PHYS DESC 8 audiotape reels (4 hrs.)
16 PHYS DESC 3 photographs
17 NOTE Materials located in: Northeast Archives of Folklore and Oral History, Maine Folklife Center, University of Maine, Orono
18 NOTE Completed for UMO course: Folklore 107, also Folklore 197, in 1973. Audiotape reference numbers are T582-T589. Photograph reference numbers are P442-P444.
19 SUBJECT Lobstermen
20 SUBJECT Women's studies --Maine
21 SUBJECT Religion
22 LOCAL SUBJ Lobstering
23 LOCAL SUBJ Fishing industry
24 LOCAL SUBJ Community life
25 LOCAL SUBJ Churches
26 LOCAL SUBJ Women
27 GENRE Student fieldwork
28 GENRE Interviews aat
29 GENRE Photographs
30 ADD AUTHOR Horr, Joe, informant
31 ADD AUTHOR Horr, Evelyn, informant
32 ADD AUTHOR Horr, Leon, informant
33 ADD AUTHOR Horr, Leila, informant
34 GEOGRAPHIC United States Maine Cumberland County Casco Bay
35 GEOGRAPHIC United States Maine Cumberland County Long Island
36 SUMMARY Contains interviews with Joe and Evelyn Horr, and Leon and Leila Horr, about lobster fishing, fishing, clamming, trawling, swordfishing, shad fishing, and the Seventh Day Adventist Church. (Lobsterman's Life Project.)
37 ACCESS No restrictions on access.
38 ACCESS Archival materials accessed through user request to staff. Photocopy service available at nominal fee. Information on literary rights available in the Archives.
39 FIND AIDS Subject, place-name and personal-name indexes available in the Archives.
40 MARC meu
41 MARC eng

RESULTS OF "SURVEY OF MAINE LOBSTERING INDUSTRY"

Total Number of Responses = 426

Ques. #	Yes	No
1	306	110
2a	300	87
b	183	159
c	44	293
d	113	189
e	235	121
f	off-shore draggers, pollution	
3	258	136
4	204	189
5	234	175
6	163	228
7	368	29
8	373	28
9a	20	17
b	45	37
c	106	130
10	136	260
11	173	237
12	141	249
13	1/15-3/1: 136, 4/15-6/1: 11 6/15-8/1: 27, None at all 134, Some other time: various	
14	116	304
15	152	264
16	212	190
17	298	116
18	63	344
19	109	300
20	186	225
21a	96	202
b	73	212
c	100	217
22	240	166
23	169	240
24	172	244
25	218	189
26	196	193
27	$10--93; $20--10; $25--7	

Name _____ Town _____ Meeting Place _____

SURVEY OF MAINE LOBSTERING INDUSTRY

The following items deal with some statistical information and data which would be helpful to the Marine Resources Committee in handling this legislation concerning the lobster industry.

1. Do you believe the lobster industry in Maine is in trouble?
   Yes_____ No_____

2. The lobster catch in 1972 was down to 15 million pounds. This is a decrease of 3 million pounds from 1971 and 7 million pounds from 1968. To what do you attribute this decrease?

Please answer all questions

(a) Over fishing (too many traps) Yes_____ No_____
(b) Over fishing (too many men) Yes _____ No_____
(c) Legal measure (3 3/16") being too short Yes_____ No_____
(d) Atmospheric and weather conditions Yes_____ No_____
(e) Part timers Yes_____ No_____
(f) Other (please specify)_____

3. Do you think the wardens in your area do their job as it should be done?
   Yes_____ No_____
   Comments_____
   _____

4. Would the lobster industry be helped if the number of Sea and Shore Fisheries wardens were increased? Yes_____ No_____ If yes, how many more wardens? _____ (Present number of wardens is 37.)

5. Do you think an increase in fines for violating Sea and Shore Fisheries laws would help the lobster industry? Yes_____ No_____

6. Would you favor reorganization of the Sea and Shore Fisheries Department into a Marine Resources Department in which the Commissioner would have broad administrative authority to enact regulations with the advice and consent of a Fisheries council, consisting of members of the fishery industry? Yes_____ No_____

7. Do you favor Senator Hathaway's legislative proposal, which, if enacted, would extend U.S. fishing rights to the outer edge of the Atlantic Continental Shelf?
   Yes_____ No_____

8. Do you favor Congressman Cohen's legislative proposal, which, if enacted, would extend U.S. fishing rights for 200 miles, as some other countries are presently claiming? Yes_____ No_____

L.D. #1443

9. This question pertains to trap limit. Please answer the question which pertains to the area you fish.

   (a) From Maine-New Hampshire border to Cape Elizabeth (District #1), would you support a law which would limit traps to 400 per boat? Yes_____ No_____ Does not apply to me _____. If not, what limit on traps would you support?_____

   (b) From Cape Elizabeth to Pemaquid Point (District #2), would you support a law which would limit traps to 600 per boat? Yes_____ No_____ Does not apply to me _____. If not, what limit on traps would you support?_____

   (c) From Pemaquid Point to Maine-Canadian border (District #3), would you support a law which would limit traps to 300 per boat? Yes_____ No_____ Does not apply to me_____ If not, what limit on traps would you support?_____

L.D. #1443

10. Would you support the division of the coastal state into 3 separate districts with 3 different trap limits? Yes_____ No_____

L.D. #1443

11. If a trap limit is enacted, would you support a law which allowed a boat an additional 100 traps for taking a stern man? Yes_____ No_____

L.D. 1443

12. If a trap limit is enacted, would you support a closed season so that the trap limit can be enforced by counting traps on the shore? Yes_____ No_____

L.D. #1443

13. What time for a trap limit count would you suggest?
January 15 to March 1_____; April 15 to June 1 _____;
June 15 to August 1 _____; None at all_____;
Some other time (please specify)_____

L.D. #1446

14. Would you support a law which would prohibit hauling on Saturdays from June 1 through August 31? Yes_____ No_____

L.D. #1444

15. Would you support a law which would prohibit hauling after 4 p.m. year round? Yes_____ No_____

16. Would you support a law which would prohibit hauling after 4 p.m. from June 1 through August 31? Yes_____ No_____

L.D. #913

17. Would you support a law which changed the Maine punch for egg-bearing female from the middle flipper to either of the side flippers? Yes_____ No_____

L.D. #1318

18. Would you support a law which increased the minimum carapace length measure by 1/16 inch a year from the present 3 3/16 inch measure to 3½ inches over a five year period? Yes_____ No_____

19. Would you support a law which increased the minimum carapace length measure by 1/16 inch from the present 3 3/16 measure to 3¼ inches? Yes_____ No_____

L.D. #1316

20. Would you support a law which removed the maximum carapace length measure from 5 inches, thereby permitting larger lobsters to be legally taken? Yes_____ No_____

L.D. #1317 21. Would you support a law which required all traps to be "vented" (i.e. raised bottom lath)?

Please answer all questions

(a) 1 1/2" Yes_____ No_____
(b) 1 5/8" Yes_____ No_____
(c) 1 3/4" Yes_____ No_____

L.D. #1566 22. Would you support a so-called "implied consent law" in which any person who receives a license thereby consents to the inspection and search of all his boats, vehicles, and buildings, and any box, bag, or other container found in his possession which may be used in connection with the business act or activity covered by the license or permit issued and for the seizure of contraband and evidence therein found? Yes_____ No_____. No dwelling house may, however, be searched without a search warrant, and then only in the daytime.

L.D. #1578 23. Would you support a law which licensed a boat to fish for lobsters? Yes_____ No_____

L.D. #1578 24. Would you support a law which increased the license fee to $50. The proceeds of which would be divided in the following manner: $10 for seed lobsters; $20 for lobster research; and $20 for hiring additional wardens or purchasing equipment for the wardens' use? Yes_____ No_____

L.D. #1578 25. Would you support a law which froze licenses at the 1973 level until the license level has dropped to 5,000 by failure to renew or attrition? Yes_____ No_____

L.D. #1578 26. Would you support a law which allowed Maine high school students to have a special license (assuming that other licensing qualifications have been met) for $25 to fish 150 traps from June 1 through September 30? Yes_____ No_____

27. If you would not support the above schedule of license fees, what would you recommend?_____
_____

28. What percentage of personal income do you receive from lobstering? _____ from all fishing jobs_____

29. In addition to your own license, how many lobster licenses are held in your immediate family? (i.e. wife and children under 16 years old)
_____

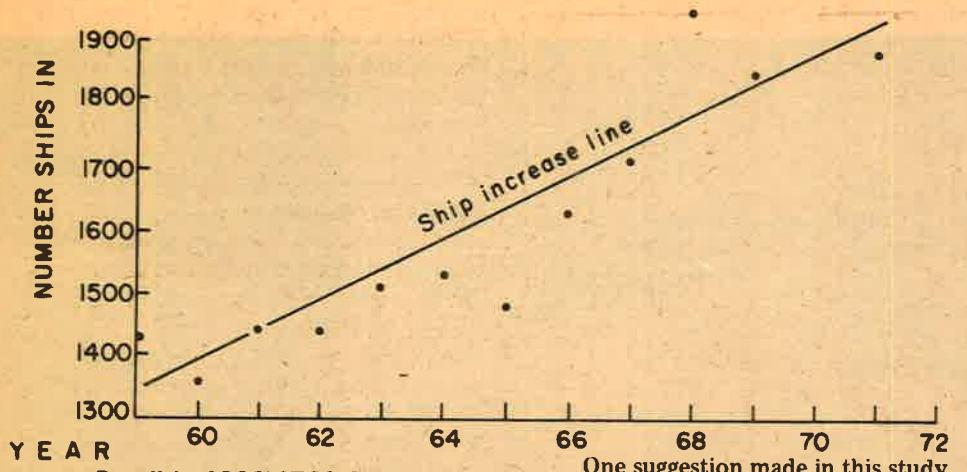
30. Your license number is_____

31. What is the average total number of traps which you fished during 1972?
_____

32. Do you fish trawls? Yes_____ No_____

THANK YOU FOR YOUR ASSISTANCE!

33. Comments: (Please be specific and key comments to questions on back page)



Possible 1200-1700 Spills

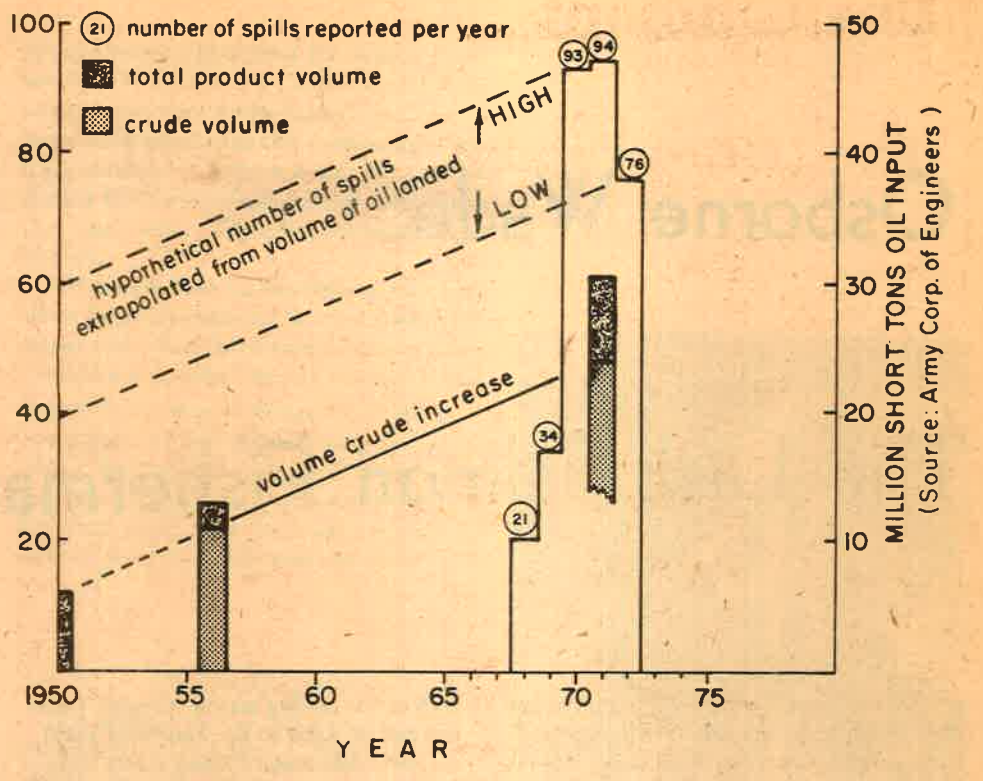
While no startling findings were developed by the study, it did plot and catalog all that was on record about most of the spills in Maine over the last 20 years. This is a start in building a baseline of information prior to more extensive programs such as sampling the hydrocarbon background levels for areas of high or low spill incidence along the coast.

...concentration of spilled oil in sediments may increase...

the environment. The area which will ultimately be affected by spillage will depend on the currents which carry the suspended and dissolved petroleum, and on the movement of sediment which has become contaminated. In the West Falmouth spill, oil was still spreading to new areas a year after the accident, presumably due to the movement of sediment.

One suggestion made in this study is what the actual number of spills in Portland Harbor may have been over the past 20 years. This extrapolation is made from the known volume of incoming crude oil arriving at Portland Pipeline. Figure 1 shows a guess at the probable number of spills assumed. The total number could be from 1200 to 1700 since 1953. Although present conditions of controlled and boomed loading sharply reduced the amounts escaping in spills, this number is a starting point for assessing what has been going on in a major oil handling harbor such as Portland which in 1971 landed about 30 million tons of all oil products.

The TRIGOM report titled "An Historical Review of Oil Spills Along the Maine Coast" is being published this month. Principal investigator for the study was Ned Shenton, a contributor to MCF. Copies will be available through TRIGOM, 96 Falmouth Street, Portland, Maine 04103.



Summary Plot of Portland Spills and Suggested Extrapolation of Previous Spills, 1950-1972

New Role For Expanded DMR Advisory Council

One of the major changes that occurred in the reorganization of the Maine Department of Sea and Shore Fisheries to form the Maine Department of Marine Resources was the change in the status of the Fisheries Advisory Council. The former Fisheries Advisory Council had little impact on the policies and function of the Department of Sea and Shore fisheries. It consisted of five members of Maine's fishing industry that were appointed by the Governor as an advisory committee to aid the Commissioner in establishing broad goals within the fishing industry. Its main responsibility was to meet bi-annually with the Commissioner of Sea and Shore Fisheries to make industry recommendations. It had no power of decision making and was, in effect, only advisory in capacity, often invisible and unknown.

New Dimensions

With the formation of the Department of Marine Resources, the Fisheries Advisory Council assumed an entirely new dimension because of the broad powers conferred upon it by the Legislature. The DMR Advisory Council is now a direct representative of the Maine Commercial fishing industry, and as such, safeguards industry interests. It is also the intent that the DMR Advisory Council inform the Commissioner of the needs of our sea to consumer system and to aid him to implement changes for improved conservation and utilization of our renewable marine resources. Specifically, its basic powers are that any regulation originated by the Commissioner of the Department of Marine Resources must meet the approval of the Advisory Council and no lease of tidal waters or flats can be consumated without its ratification.

The DMR Advisory Council, consisting of nine members of the Maine fishing industry was confirmed by the Governor's Advisory Council November 11, 1973. Note the roster (following) of the currently appointed members, listing their residence by County, which conceiveably will be the area that they will individually represent most fully; the nature of the type of fisheries business that they personally conduct; and the specie of the renewable marine resource with which they are most involved and of which they are most knowledgeable.

It is assumed that the reason for enlarging the Department of Sea and Shore fisheries Advisory Council of five members to form the present nine member DMR Advisory Council was to obtain a more uniform representation along the entire coast and to gain such diversity of industry interests among the membership that there would be present at least one member of the council who is knowledgeable of a specific segment of the fisheries and the marine resource involved therein. In checking this roster of the current nine members of the DMR Advisory Council, some inequalities in geographic and industry representation might be pointed out, but this should not prove to be a serious detriment to the function of this council. Three new appointments will be made in 1974 and three in 1975. In the interim, any descrepancies that become apparent should be corrected through future appointments.

Help for the Industry

The most important consideration concerning the Advisory Council is the major role it can play to aid the cause of the Maine fisheries. All segments of the fishing industry should become informed of the new status of the Advisory Council so that constructive suggestions by fishermen, processors, and dealers can be relayed to a member of the Advisory Council in order that it may come to the attention of the Commissioner for consideration.

The organization of the Department of Maine Resources has laid the ground work for major progress with our fisheries, Great strides can be made in conservation, propagation and utilization of all our renewable marine resources through expansion of biological and technical research and marketing. If optimum results are to be obtained there should be a maximum involvement of industry members.

As the MAINE COMMERCIAL FISHERIES has such broad coverage of the Maine fishing industry, it is the hope of this writer that the roster of the nine members of the Council will prove helpful for future reference by fishing industry members. This roster will make readily available the addresses of the member to be contacted whenever there is the occasion to communicate with the Council. This Council is the direct industry representative and is the best and most direct communication link between the fishermen and the Department of Marine Resources. It is hoped that there will be no hesitation by the fishermen to personally participate in programs go improve his segment of the industry through communication with the members of the Advisory Council.

There is one industry that deserves emphasize at the meetings o the DMR Advisory Council, namely aquaculture, which is a new Maine industry. Because of the leasing laws passed by the 106th Legislature, aquaculture now has a potential to become a major asset to fishing industry members. The Adivsory Council appears to have no members that are involved in depth with aquaculture and therefore anyone within the State who has expertise in aquaculture should volunteer data and information to the Advisory Council. This is particularly pertinent owning to the Advisory Council possessing the veto of any lease application for aquaculture within our Maine coastal area. It is my contention that every application for lease of tidal waters or flats for the purposes of aquaculture should be thoroughly analyzed and evaluated, not only for the long term benefits of the leasee, but also for the effects it may produce on the environment, the marine resource, and the corresponding industry. In order to render wise decisions on lease applications the Advisory Council must possess the knowledge and function of aquaculture. It appears that this must originate, in most part, from outside the Council membership.

The 106th Maine Legislature demonstrated a revival of interest in our fishing industry by enacting bills to organize the Department of Marine Resources, establish leases for aquaculture, and the acquisition of the Federal Marine Laboratory at Boothbay by the Department of Marine Resources. The working tools have been provided to revitalize our sea to consumer system. It appears that it is now up to the fishing industry to unite with the Department of Marine Resources in a maximum effort to turn the tide of our declining fisheries.

The DMR Advisory Council, if it so dictates, can go a long way towards closing the communications gap that has existed so long between fishermen and government agencies and the educational and scientific sector of the state.

Ivan Flye
Newcastle

DMR Advisory Council at their first meeting: Bottom L-R, Calvin Stinson, vice-chairman; Commissioner Spencer Apollonio; David Bergson, chairman; Barbara Fish, secretary. Back row, L-R, Aldo Ciomei, Lester Orcutt, Arnold McConchie, Ernest Grant and Linden Perry.

They'd keep clean about ten days, then we'd have to shift them over and put a clean one in...We took them ashore and we would wash them some in the slip, slather them back and forth, then take them and hang them up on poles and let them dry. And when they were dry we always colored them then you know, and put them in the kettle and made the dye....The dye was made out of the sap out of a southern tree, it was called 'cutch', we used to buy it in cakes....It preserved the twine, it was a preservative more or less."

Tending the Nets

Wade and his father went out on the water several times during a typical day during the fishing season to check the nets for salmon. As he described it:

"We went out every day no matter what the weather was, always tended out on the nets about four times a day, on an average of four times a day. We'd go out in the morning about sunrise or a little after, and then about eleven o'clock or so, and then again in the afternoon if we were catching fish, and then again just before dark. We didn't like to leave them too long, we liked to go out and get the salmon out you know, instead of leaving them there."

When Wade rowed out to remove salmon from the nets he would lean over the bow of his boat and pick out the fish that had become caught in the meshes of the net ("mashed in"), and he would attempt to entangle those that hadn't "mashed in", and kill them with his wooden billy club.

"About the smallest salmon we could catch weighted eight pounds, or 8¼, 8½. They would mash in, those smallest ones, they'd mash in pretty near to their back fin. But a ten pound salmon, if he was really kind of chunky, he'd just go in over his gills, then he'd be hung up. And a big salmon couldn't mash, a twenty pounder or more, they couldn't get their head in far enough to stick....They went in and swam around in the pound and were trapped there, that's the way we got them."

The size of a fisherman's catch was never predictable, but certain weather conditions provided reliable clues.

"It's a funny thing about salmon, you might not see a fish for two or three days, and it come a good southerly breeze, that's what we wanted...and we'd begin to catch them and we might catch 30 or 40 in two or three days if we had good weather. But you take a northwest wind and you wouldn't catch anything hardly, once in a while a straggler, but you let the wind come in to south'ard...and sometimes we'd get 15, 20. That's the way it worked —— funny. You never knew, you never knew what you were going to get, although if you had good weather you knew you'd get some fish if there were any."

When he had taken a sufficient number of salmon from the nets, Wade would pack them in wooden boxes with crushed ice and take them to Camden where they would be loaded aboard the Boston steamer. Arriving at the Boston fish market the next day, Wade's salmon were delivered to fish dealers who then sent him a check for his catch. Prices that he received for his salmon ranged from a high of 60¢ per pound paid for the first fish of the season to a low of 15¢ per pound paid when the market was glutted with salmon shipped from St. John, New Brunswick. According to Wade, a fisherman caught between 125 and 150 salmon in a good year, and as few as 50 in a poor year.

The Salmon 'Wherry'

Over the years a distinctive boat evolved in the Lincolnville area that was superbly suited to the needs of salmon fishermen. Known as the salmon or Lincolnville wherry, these ruggedly constructed lapstrake boats demonstrated that local boat builders, who were also salmon fishermen, were able to develop a craft that was ideal for salmon fishing. The cedar planked wherries were made full forward in order to support a fisherman as he knelt in the bow and took salmon from his nets. The wherry's flat, hardwood bottom did not catch on the cork line of the nets, and a fisherman could row across the top of the "lead net" and the "hook of nets" easily. Also, the flat bottom was strong enough to withstand repeated beachings and it made it easy to roll the wherry across the rocky shore on slip poles. The wherry's wineglass stern made for easy rowing and facilitated stern-first launchings into the surf. Finally, the wherry was a boat that handled best with a load aboard.

Mr. Wade still owns the 12' wherry that he used when he tended his nets, and in regard to that class of craft he asserts:

"You couldn't do any netting without the right kind of boat. Most of the rowboats that you see today, you couldn't do anything with them, they're too sharp and there's no room forward....But our boats held up because they were full, they come along full all the way to the stern."

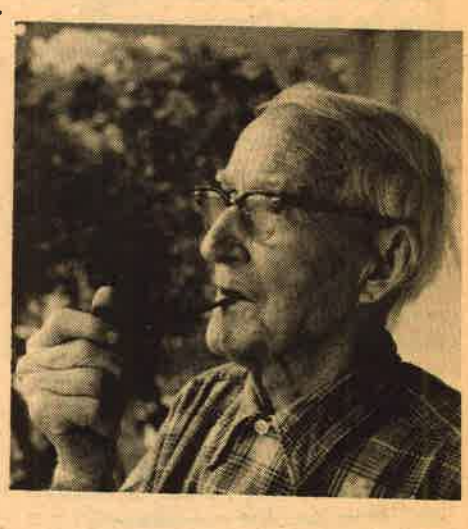
..... Lament

Industrialization combined with gross indifference to the preservation of natural resources nearly obliterated the salmon population of Penobscot Bay, and after 1934 no salmon nets were set in Duck Trap Cove. Osborn Wade admits that he'll never again see large numbers of salmon in the bay, and he doubts that salmon will ever be plentiful as they once were. With a hint of helplessness he says:

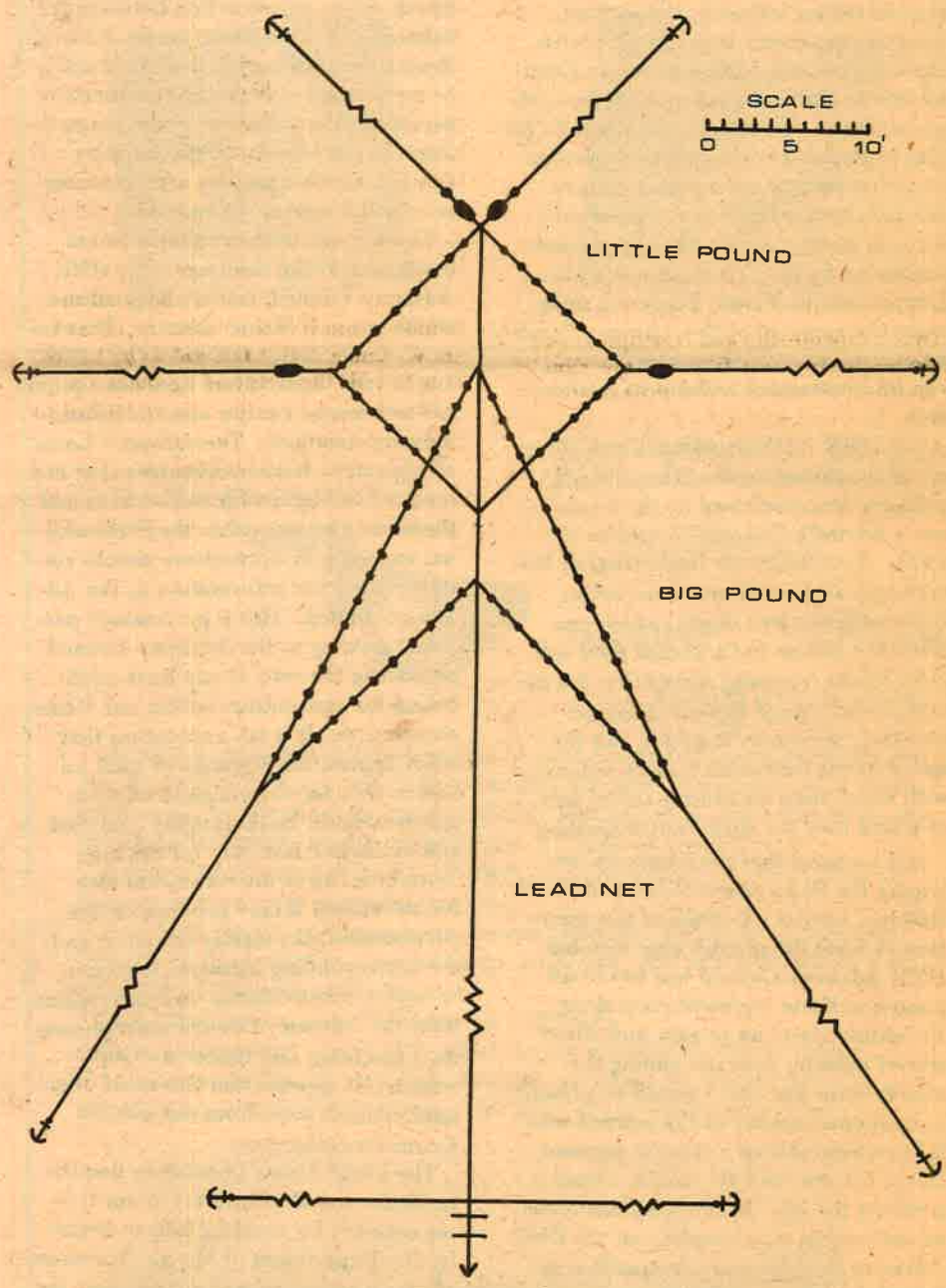
"I can look back on the fishing, way back when I was 20 years old or so, it never entered my mind that there would come a time when there wouldn't be any fishing. It was the natural course of things, come along every year and had been coming, and we didn't, we couldn't look ahead to see what was going to happen. We thought we'd have fish, every year there was a run up river as usual, but pollution and so on ....."

By David Littleton-Taylor

D. Littleton-Taylor, researcher for the Penobscot Marine Museum, Searsport, Me., has conducted tape recorded interviews with knowledgeable individuals around Penobscot Bay in order to collect and preserve information pertaining to the region's fisheries. Collected tapes will be stored at the Northeast Archives of Folklore and Oral History, at the University of Maine, Orono, and the transcripts of these tapes will be stored at the Penobscot Marine Museum.



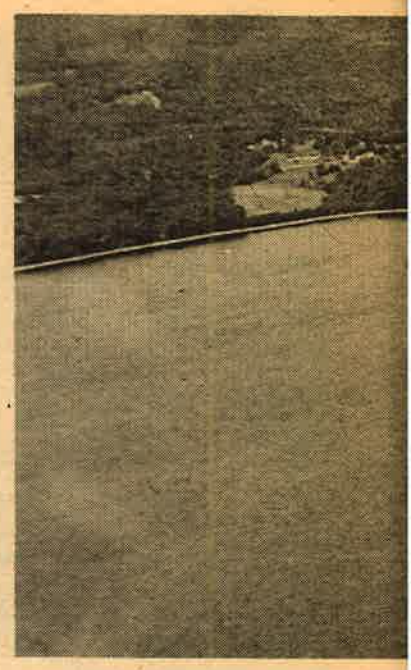
Osborn Wade



Overview of Osborne Wade's "hook of nets," held fast with mooring lines, anchors and buoys.

Osborne Wade

The Last Salmon Fisherman



Ariel view of Duck Trap Cove

"A lot of people enjoyed salmon fishing, they liked to get the fish. A lot of people I don't think cared anything about it, some people didn't take to it you know. But that was one thing we used to look forward to...We had our gear, and you get into the routine of fishing and you would like it if you kept at it. You know what I mean? It was something that you looked forward to and did every year, and you got some money out of it, quick."

Slowly overcome by pollution, the Penobscot Bay commercial salmon fishery has lain dormant now for forty years, but the intricacies of catching Atlantic salmon with a "hook of nets" remain alive in the vivid memory of 85 year old Osborne "Ozzie" Wade Sr. of Lincolnville. Though hundreds of men, in many parts of the bay have participated in the fishery since the late 1700s, only Wade remains, he is the last salmon fisherman.

Salmon fishing was part of the annual cycle of subsistence activities for many of the men who lived along Duck Trap Cove between Lincolnville and Northport, and up to ten berths were fished at one time or another, all within a one mile stretch of shore. Men looked forward to the salmon fishing season because it brought about a change of pace and allowed them to pick up extra cash as well. Because of the shortness of the fishing season (roughly from the end of April to the Fourth of July) no one could make a living solely from the salmon fishery. As Wade states:

"Nobody depended on (salmon) fishing for a living, you couldn't make a living out of it because it was too short a season. People who fished generally had a piece of land, they did farming, maybe kept a cow or two and did other work except when they were fishing."

Inherited Fishery

As is common with other types of fishing, information about how to properly fish for salmon was passed from father to son. Wade's grandfather and father maintained fishing berths on their property, and when Osborne was a youngster he too began to learn the techniques and theories associated with salmon fishing.

"I don't know of anybody that fished along here but what their folks fished before them. I don't know of anybody. It was handed right down in about all the families from father to son...As far as I know, a man didn't fish unless he knew how to knit the nets and rig them. A 'greenhorn', he couldn't do it, he had to be brought up with it to know it."

By the time Wade was fourteen, he had acquired a solid understanding of salmon fishing, and he was hired by neighbor Lucius Duncan to help him with his nets. For the next eight years Wade spent his salmon seasons at Duncan's berth, but in 1909, discovering an opportunity to make good wages, he went to Lawrence, Mass., where he worked as a time-keeper in a woolen mill. However, at the end of thirteen months he returned home, and from 1910 until the salmon played out in 1934, he fished with his father on their two berths in Duck Trap Cove.

Because Atlantic salmon were "lazy fish", that is they tended to drift along with the current, concave sections of the bay like Duck Trap Cove often possessed counter currents that drew salmon into the coves and into fishermen's nets. Incoming tides produced a counter-clockwise current in Duck Trap Cove, and outgoing tides created a current that traveled in the opposite direction. Salmon nets were set across these currents, and captured salmon that were drawn into the cove.

The Mechanics of the Trap

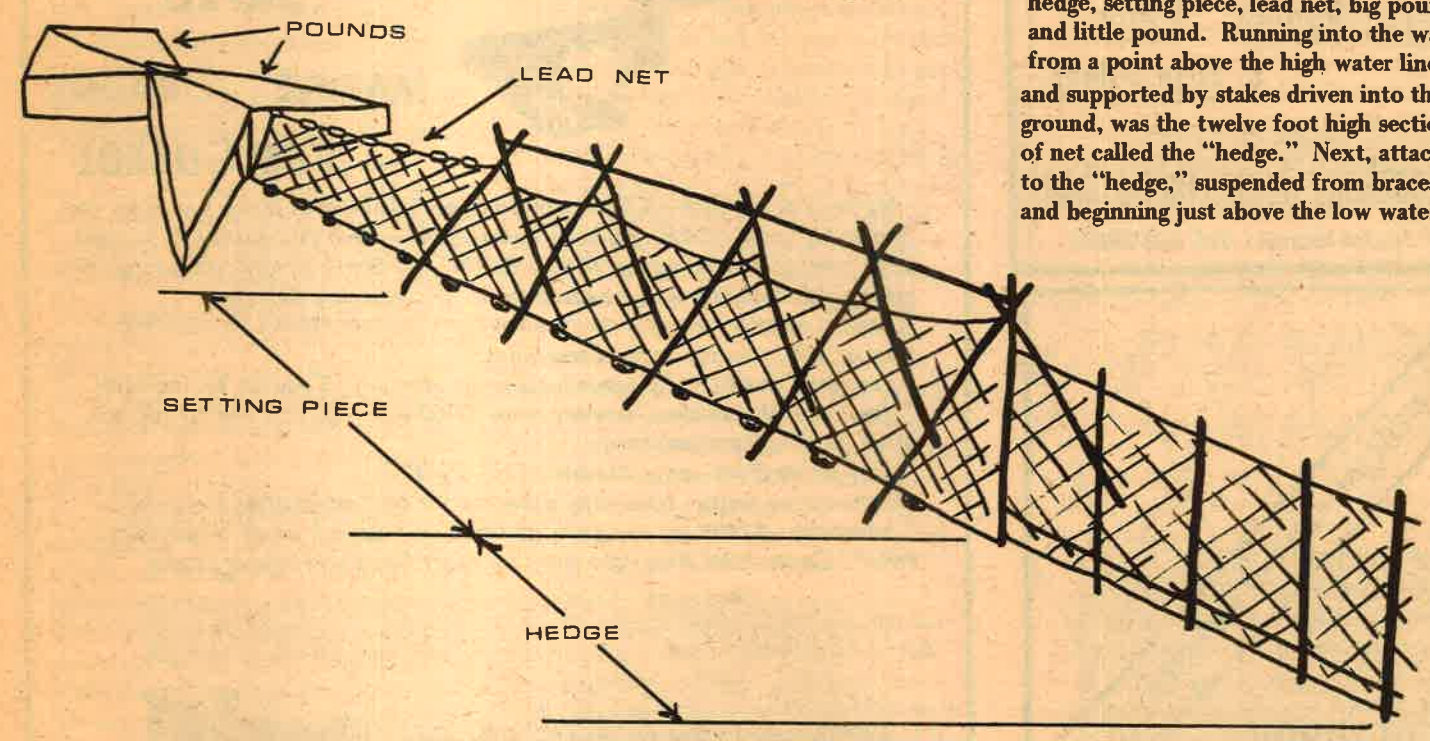
All of the Duck Trap fishermen employed similar arrangements of gear consisting of nets, buoys, floats, sinkers, and line. Composed of three leader nets and two floored pound nets joined together in a straight line, the salmon traps were set in the water perpendicular to the shore. The traps consisted of five major parts: hedge, setting piece, lead net, big pound, and little pound. Running into the water from a point above the high water line and supported by stakes driven into the ground, was the twelve foot high section of net called the "hedge." Next, attached to the "hedge," suspended from braces, and beginning just above the low water line was the section of net called the "setting piece." In order to insure that salmon would not slip under the netting, rock sinkers were attached to the bottom line of the "setting piece." The lengths of the "hedge" and the "setting piece" depended on the slope of the shore, and therefore varied from berth to berth. Joined to the "setting piece" was a 24 fathom long section of net called the "lead net." Cedar floats attached to the top line of the "lead net" kept it riding on the surface, and as with the "setting piece", rock sinkers secured the bottom line to the sea floor. The "lead net" was the last section of straight leader net held, like the other two, at right angles to the sea bed. At its end, two, twelve foot deep, floored pound nets, referred to as the "hook of nets", were attached. The first, called the "big pound", resembled an arrowhead pointing away from shore. The point of the "big pound" ran into the center of the square, outermost section of the salmon trap, called the "little pound." Both pounds were held in place by a total of six iron anchors and six large wooden buoys. As many as three "hooks of nets," separated by 24 fathom "lead nets", were joined together in one straight line. Simply, the salmon trap served as an effective capture device because when shore-hugging salmon encountered the straight leader net sections in their paths, they would follow them along and enter the pounds where they became trapped.

Using Scottish hemp twine, salmon fishermen knit their own nets. Mr. Wade recalls that he used to arrange the 12 thread cork rope and the 6 thread bottom rope (both steam tarred hemp) in the desired shapes in his field, stake them down, and then join them together with six inch mesh (stretched) net that he had knit during the winter. All sections of the salmon trap were twelve feet deep (32 mesh).

Care of Gear

In addition to the proper placement of the nets, Wade feels that another important factor that influenced a fisherman's success was the way that he cared for his nets.

"The way you handled your gear had quite a lot to do with it. If you kept your nets clean, tended to them, and knew how to set them just right, why you were more successful than someone who was slack about it...We never figured that a hook of nets fished very good when it got real dirty and slimy, you know. They'd last about ten days pretty clean, especially if we had a good smart southerly breeze.



Hedge, setting piece and lead net — leader nets that channel salmon into the two pound nets.

Maine Profiles

Life And Death On The Sea

ELMER AND BELVA M. Alley of Prospect Harbor, where they live now, and Beals Island, where both were born, went to school together and have been fishing together off the Maine coast since 1919, the year they were married. Their son, Carroll, is a fisherman out of Prospect Harbor and their daughter, Leonice, lives on Beals. Both Elmer and Belva are 72 and are still fishing. In the following interview, Elmer relates some of the near misses, good times and plain realities of more than 50 years on the water.

Text and photos by Lynn Franklin

SOMETIMES my engine would get hot and stop on me and I knew if it got hot and stopped this time I'd be an hour starting it again, wouldn't make it at all and the boy would drown. So I set her at what I thought she would stand and went ahead. I finally made it.

When I got to him the stern of his boat was already under water quite a bit and he was standing at the back end of the boat with water up around his waist. I sailed over his stern, right over it, my keel probably shoving it down some more because that was the only way I could reach him. I had throwed the engine out of gear and I had a little riding sail on her. Well, I shot right over the stern near enough to reach out and we locked hands.

I'll tell you mister we held on to one another until the sail brought my boat head into the wind. After a struggle, because we had to reckon with a good deal of floundering around, I got him aboard. He was awful scared and I didn't blame him.

In those boats they had a piece of pine screwed down in with nuts on it and the rudder post come up through that with a tiller on top.

That was back somewhere around 1930. He's going strong today.

I WAS BORN a fisherman, I suppose. My fatherwas a fisherman all his life, most of the rest of the family also. When I was large enough I would go with him handlining and trawling for cod fish and haddock and whatnot. By the time I was 16 I was going with him regular.

We went to Grand Manan Bank down off Nova Scotia, a long ways let me tell you from Moosabec Light. I've been there with him quite a lot of times fishing with a crowd of boats for company. Some of the boats was not very large, either. Largest were probably 35 foot with an eight foot beam. And then we used to fish out around Crowley's Rock and Western Broken Bottom.

My Dad and me got along good, we never had no trouble. He was a nice fellow to go with. He knew what he was doing all the time. Didn't have to worry any if you stayed overnight. He is wash my hands and arms and roll my sleeves down. Now with short wristers and the shirt sleeves down around them your arms are always wet clear to the elbow.

It ain't very hot when your arms are all wet out there in the winter. I've had wet to the top of my shoulders plenty of times and it's cold too. We used to have oil clothes — we have the rubber clothes now — and after you wear the oil two or three times they'd crack and leak. The water would get into your shirt and work through to you and then Mister I guess you were cold.

I most always fished with just a canvas spray hood and the last of it a little shelter on the back of the spray hood. When I was a younger fellow all I had is just the spray hood. You got plenty of water in the face too, I can tell you, face and down your neck.

Most of us boys on Beals usually got through grammar school at 15 — no high school on the island — and went fishing. A few would go to high school on Jonesport or some other place.

OH, I CAN swim some, enough to keep up a little while, but not enough to call swim. I come pipes on the bottom of my first Belva M. They dropped down, broke the fastening on the bottom. I was down to Pettit Manan and the wind was southwest, a fair breeze quite choppy. I smelled rubber and looked into the engine. The fan belt was touching the hose. I had two or three traps on and got them overboard and out of the way. Then I got some rope and tied those pipes just as tight as I could to the floor beams. I started for home. I'd see a boat and say, well I'll get up to him, I'll speak him before long. Before I'd get to him he'd go somewhere else. I come right straight home and I couldn't speak nobody. I didn't have a telephone, nothing. I grounded her out and strapped my pipes up again. If it had been an old boat the pipes would have torn the plank right off her.

What I should have done, I know now, is put a line in the scupper on one side and gone up around the bow and passed the line down under her. But you can't know everything all the time. When you get in a mess sometimes you don't think the right thing.

THERE WAS HERRING around us — and sometimes quite a lot of them big whales blowing around too. He always said they was company. They wouldn't bother you but sometimes they weren't too far away.

Now with the ebb tide not running very hard, just before dark he'd take that little punt and that piece of netting and he'd string it out. He'd go adrift with it on the tide and drift up to the westward and leave me in the boat alone. I didn't like it so well as he did in the punt. I didn't get scared but I'd just as soon he'd been in the boat. It would be getting dark when he'd row back and lots of times he'd have a few herring in that piece of net. I'd a been scared to death of them old whales if I'd been him in that punt. Scared they'd snag the net, haul me off.

Off there we used a five pound lead to tend bottom. When the tide got running hard you couldn't fish because the tide would run that lead right up into the water and we'd have to wait three or four hours before we could tend bottom again. We caught mostly cod and pollock, sometimes halibut and once in a while a haddock. We'd get there early in the morning before light and

on with a good deal of floundering around, I got him aboard. He was awful scared and I didn't blame him.

We picked up some of the stuff floating around and while I was getting the boy under control his boat went under. They never found it afterward either; they dragged for it. I think it bobbed along the bottom with the tide.

I got him home without freezing — it was in April and cold, a Northwest wind blowing quite hard. We'd got about half way back, next to one of the islands, when the engine stopped. So we waited two or three minutes until I knew we could start it again and I took him home.

The tide was up so I went in right close to where he lived and landed him at the wharf. His brother-in-law see us come in and came down to the boat.

I knew he was colder than a person ought to be and he needed that hot drink. Then I went around and sold what lobsters I had, came back put the boat on the mooring. The boy came out of it alright but for his boat and gear. He never got no cold or anything out of it. He's down to Steuben now fishing.

You know it's funny; his father saw him but thought he was just broke down and he would haul his gear a little longer and then go over and get him. He didn't know what happened to the boat when it disappeared. When he came in later he found out.

His boat was probably 20 years old without doubt. I think she split open in the log where the rudder post come up through, but of course I don't know. There was no way he could stop it.

no trouble. He was a nice fellow to go with. He knew what he was doing all the time. Didn't have to worry any if you stayed overnight. He didn't sleep much. He'd turn in, lay down with a light set, then rise up a good many times peeking out the gangway. He'd always want to see what was going on. He was watchful lest she break adrift or a steam boat come at us and run us down. More steamboats passing than anything else.

Not too often, but sometimes, when it's awful rough and a big gale of wind you can get caught with an unlucky sea. You have to be watching out. I got caught one time. I was getting pretty well in when all at once this sea rolled up under me. I slowed and the boat rolled down over it on her side; she didn't do any harm but she could have. I was stern to it but if I'd been side to, I don't know what it might have done. A ledge under a good heavy breeze of wind will cause that.

Time and again off Southeast Rock outside Pettit Manan I've seen it breeze up and blow. Fellows in boats bigger than mine and high sided decided it was best to come in. I always got in alright. I had to watch the seas but I never got any water in her and never done any harm. A lot of times you can cut one way or the other and avoid the seas quite a lot if you get an idea which way it's going.

YOU GOT TO BE warm and not just for comfort but for your health. For 20 years I've worn wristers for winter fishing. When I come back my shirtsleeves are always dry, all I have to do

OH, I CAN swim some, enough to keep up a little while, but not enough to call swim. I come too near once. Was thought to be dead even. We sunk it. Had some drums of gasoline in the front end and it wasn't decked over. It was pretty choppy. When she went into a sea, one of them unlucky ones, she filled. That was it. She didn't go exactly down right that minute. A bulkhead forward of the engine kept the water forward for a while but there was nothing we could do about it.

If we could have got a line or two around the barrells they might have held her up but you couldn't do it. Seas kept slooping in. Only thing you had to do is just wait and when it come time, get away from her.

I was the last one left, probably that's the reason I was still alive when they picked me up. One of the other fellows had some life in him but he'd been floating on his back with his head under water. I didn't have no water in me. I didn't know when they hauled me in but I did know when they took hold of me.

My mother's prayers is the only thing saved my life more than once.

Two of the boys with me was from Beals Island. It was the third day of May at Isles of Shoals. A little snow squall come with it. The water was cold. You could feel your arms and legs stiffen just like a stick.

YOU CAN'T FISH in sight of another boat all the time. Not all the time. A lot of time you're in sight. One time I had trouble with the cooling

GRANDFATHER on my father's side went to the Banks regular in schooners. They'd salt in fish, make as many trips as they had to to fill the boat then go to Portland and get rid of them. They'd get a lot of stuff for the winter in Portland and bring it home. Salt pork, hogsheads of molasses was there among those wharves in Portland; different articles you'd want through the winter. They'd get apples for the children.

They used small two-masted schooners built sometimes around Harrendon River and around Gouldsboro, different places along the coast. Sometimes there'd be a couple of fishermen get a schooner together and make a summer's business of it.

Father now went from a sloop boat to what we called the overhang stern boat about 20-foot. That was just about when I was old enough to remember it.

Then he had one 22 foot we called a torpedo stern. Then he went to a 26 foot and thought he really had something. From that he went to a 30 foot, and Mister, that was a big boat in them days.

In the 26 footer I used to go with him to Crowley's Rock, 12 miles outside of land. The last boat father had was 35 feet, had a cabin on it, but no shelter rigged behind the way they have nowadays. We had a spray hood rigged where now they have a house.

When he and I was off to Grand Manan Bank and to Marblehead Bank we had a punt with us. He had a small piece of netting wih him.

times halibut and once in a while a haddock. We'd get there early in the morning before light and fish that day and stay that night and fish the next day.

Sometimes it was foggy. I know one time it got dark before we got in to Crumpled Island. We got into the smooth water up in the bay and run up through the ledges a mile or so. We sounded the water and it was quite shoal so he said 'I don't know, we'd better stay here and wait for morning.' So we did. Took a nap. Next morning the fog scaled up and we was right out alright. So you see we was careful.

I've seen a lot of it. I never heard Poppa say he had any regrets being a fisherman. Sometimes he'd say he wished he had a better education. He used to tell me sometimes, you better see if you can't get you some education. Then you wouldn't have to be out here in this a hundred times. I didn't answer him because I didn't expect to get any more education than I had already.

I tried the Coast Guard for a while but got tired of that and reckoned I'd either make a living or starve. It's a tough life, a fisherman, but there's one advantage: You're your own boss. You go if you want to. You come if you want to. If it's blowing you stay home. If you want to go out in it you go.

Now my wife and I went together since I was trawling in the summer. After trawling she went with me lobster fishing and we stayed together fishing every day for about 12 years.

Living The Simple Life

Continued from page 1D

putting his debater's skill to work, he persuaded the owners of an empty 12-room mansion to let him live there as a caretaker.

"If you're a landlord," Milton says, "you're much better off having someone staying in an empty house. And I'm one of those someones."

The place had 11-foot ceilings and seven marble fireplaces. The previous tenant was an eccentric inventor who left enough euqipment for Milton to set up his own silk-screen studio. Without much formal training, he perfected the ability to make silk-screened prints. (Silk screening is a color-printing process that can sometimes become quite complex.) While working on his craft, Milton made do by designing brochures part-time at nearby Colby College, doing some house painting and fixing up around the mansion.

But, as before, it wasn't enough. "There were days in that big house," he says, "when I would just sit and look at that wood stove in the kitchen. I just couldn't get anything done." So when some friends decided to travel farther into the wilds, Milton went along and ended up last August in the little house outside Wellington.

Surviving in Wellington has been tough. Unlike some of the other hippies in the area, Milton doesn't collect welfare. He doesn't borrow money, and he doesn't buy on credit. But with a good deal of ingenuity, he has made $400 last from summer into the dead of winter. And now, thanks to his calendar, 1973 looks like a good year.

The owners of the house he lives in are Clair and Marjorie Cross, a middle-aged couple who have never traveled south of Augusta. Clair is first selectman of Wellington, a taciturn man who wears baggy overalls and lets Milton live on his land in return for some help caring for his "creatures."

At dawn each day, Milton walks across the road to Clair's barn and shovels manure into a pit below the cow stalls. The body heat from the dozen calves and cows fogs the barn windows. The animals squirm and moo and grunt as Milton does his work. Then Clair ambles into the barn.

"Mornin," Milton says. "Up a little late this morning." Clair gazes through a clear spot in a window at the sun coming up over the snow-covered fields. "Ayup," he says. "Days are getting longer."

In January, after a heavy snow, the roof of the barn nearly caved in. Milton and others in the town spent several dangerous days shoring it up. "It's not like working for Clair," Milton says. "It's just being neighbors. Besides getting a pretty nice house, I get manure for my garden, and I can borrow tools and use their phone. Clair and Marjorie come over for ice cream after dinner. They have lots of stories."

When he came to Wellington last summer, Milton and some close friends, Richard and Sheila Garrett, put in a garden near the house and lived almost exclusively on the vegetables they raised. They canned tomatoes and applesauce, and Milton has carrots and turnips buried in sand in his basement. But in the winter he buys most of his food — largely grains and vegetables, although Clair bagged a deer in the fall and Milton has shared in the venison.

His clothes aren't high-fashion: a scruffy assortment of faded shirts and rumpled pants, all with holes. Once, he brought all his old clothes into a Waterville thrift store and traded them for a whole wardrobe of new old clothes. "I rely on rummage sales a lot," he says. And he has also discovered that college dormitories at the end of a school year are a prime source of discards.

In fact, Milton has found that many things society casually consigns to the junk heap can be valuable. Much of the wood he uses, for instance, comes from edgings tossed out by sawmills. His woodshed is loaded with rusty old tools, bits of rope, tin cans, and piles of unwanted nuts and bolts. The cars in his yard are his chief supply of spare parts. Some of his furniture was salvaged from old buildings before they were torn down.

"Having a lot of junk around is pretty handy," Milton says. "Lots of things that aren't useful for other people are useful for me. I never pay for anything if I can help it."

If he does pay, it isn't much. Take his car. A few years ago, he bought an ancient Volkswagen for $75. When the body rotted away, he removed the engine and put it into a relatively recent 1964 VW body that he bought for $35. The bumper droops and the muffler sputters. Remarkably, the car runs. "You always have to fool around with it. It doesn't start all the time. But it's cheap," Milton says. Insurance? He doesn't have any.

There are a few amenities around Milton's house: a blender in the kitchen and, surprisingly, a modern freezer in the woodshed, a few steps from the outhouse. These are on loan from a "benefactor" who is temporarily away from the area. Milton doesn't go to movies or buy books and magazines. He doesn't have a television set or a telephone of his own. When a reporter took him to Shirley's Restaurant in nearby Skowhegan, it was the first time he had been out to dinner in two years. But he does support a dog named Visions and a cat named Bruno. (Bruno was weaned by Visions, incidentally, and is convinced she is a dog.)

Milton's greatest pleasure in the winter is skiing—not the kind that requires fancy togs, expensive equipment and the purchase of lift tickets. He avoids all that by going cross-country skiing. For well under $75 he outfitted himself, and he spends at least an hour every day gliding quietly across the fields and through the frozen woods on his skis. And every morning after cleaning the barn and eating a big breakfast, he skis to the center of town to a one-room former schoolhouse where he has set up a silk-screen studio.

The studio is spacious and well-lighted by a wall of windows. Milton spends much of his time there. But he doesn't own the schoolhouse, and he doesn't pay rent either. He uses it in return for the work he did last summer renovating it with the owner, a 27-year-old woodworker.

Besides the money he made from his calendar, Milton picks up a few dollars printing posters for local events, selling T-shirts he silk-screens (one has the word "Artichoke" in big, green letters over a picture of an artichoke) and making the rounds of craft fairs. For the most part, he trades his work for materials or for help from other people. "We help each other out, so there's hardly any money exchanged," Milton says. The practice, by the way, cuts down on income taxes.

Milton has been so successful at silk screening that he talks about the possibility of getting some of the townspeople interested in taking up similar crafts as a source of much-needed income. "The old people really like having young people around," he says, because most of their own children tend to leave the town instead of staying and trying to create work there.

Some of the young people who have moved in to replace them have already gotten together to help reactivate the Grange. Some plan to run for town office someday. However, it may be a long time before any are accepted as natives in the closely knit community. (Milton tells of asking a woman in another tiny hamlet on an island off the coast if she was born there. "Oh, no," was the reply. "I came from the other side of the island.")

Still, Milton is planning to spend at least a few decades in Wellington, possibly with a wife if he can find the right girl. "I'm coming to the point where I can choose the work I want to do," he says. "Maybe I really won't be home until I have some land of my own. But I don't have any now, and I'm not suffering on account of it. I'm willing to wait."

Maine Profiles

Feeding The Lobsters

John Dyer: he spends $3,000 a year just for bait

JOHN A. DYER, 64, of Douglas Street in Brunswick, fishes out of Dyer's Cove on Sebascodegan Island. His boat, the Linda Ann, is named after his daughter and is hauled out for the winter close by the old family place where Mr. Dyer and his father were born.

Interview and photo by Lynn Franklin

GRANDFATHER lived here but he fished the whole coast. He went on large sailing vessels and when they'd come into Boothbay he'd walk home. 'Course he'd go mackeral fishing, whatever he could get to do. He worked in Bath Iron Works also.

My father used to go seining across the bay. He used to bait big boats, Georgia fishermen, to go handlining on the Banks. The big boats got their ice at Goddards, clear fresh water ice.

I started in just a youngster, had my first motor boat when I was 14. That boat had a Myannis 1 cylinder and I broke my arm right

IT'S EASY ENOUGH fishing in this area and I can make a living. Ten or fifteen men are fishing it with me. I've got 1,000 traps and fish about 800 at the peak time in the fall. When the shedders come on, I have about 600. I go with a helper and we haul 450 to 475 a day. So I can haul a little more than half my gear every day.

It makes a difference if we go off shore, then we're hauling in deeper water and we've got the time spent getting out there. Then, I'm not so young as I was and I can't wrestle the traps around like I used to.

About tending to them, I don't lose more than six or seven a year out of 800. This trap

My boat is 37 feet and I use a Ford diesal. The last diesal lasted me 10 years and I put in a new one last spring. Cost me about $3400. My boat will be 12 years old this spring. She's holding up lovely. I had it fiberglassed when she was new, rough sanded and then covered with resin and cloth.

I laid on just one layer except where I haul, that's three. It holds up very well.

I don't lobster in the winter. This cove can freeze up like the North Pole, but this winter the January thaw melted it all out.

market. They were used for handlining bait.

I sell now to a cooperative. We've had it for more than 18 years and we've hired a manager, Robert Waddle. He's a good man, almost always able to get bait to us.

We most generally use redfish from the draggers. Much of it comes from Canada through Rockland.

My traps are a third again bigger than my father's. Mine are 30 inches, three parlor traps. His had just one parlor. I've had some trouble with traps rolling over in deep water where the tide runs stronger. So I'm putting extra weight in them. These will fish in about 25 fathoms.

We bait them with alewives, cunners, hake (the dinky and the cork hake) flatfish, that's flounders. Flounders stay on the longest. It's a harder bait.

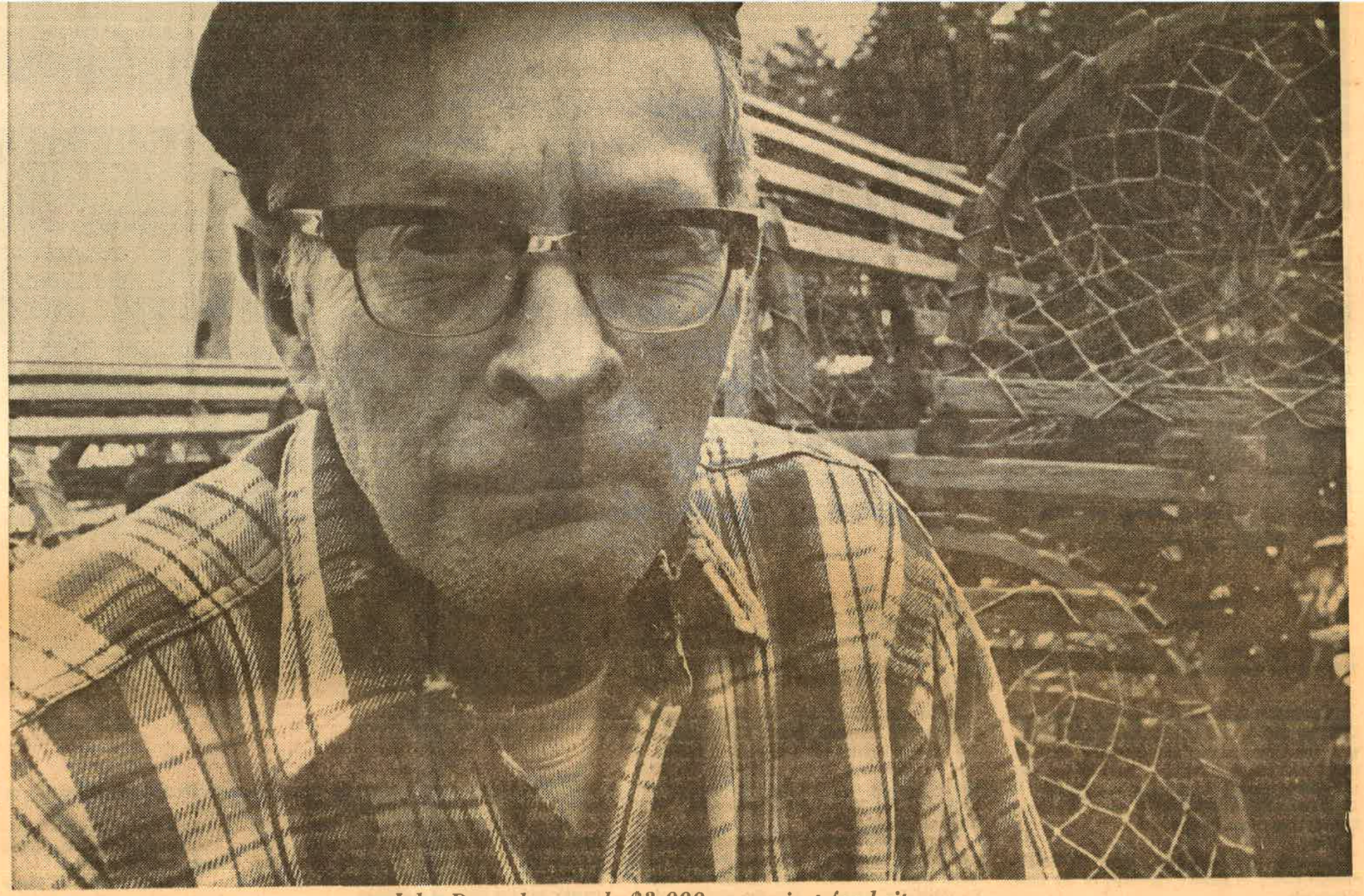
We're always feeding the lobsters. For example, I'm just one lobster fisherman and I feed about $3,000 worth of bait a year and that's not even fishing winters.

Those fellows hauling around 700 traps a day, they use more than 15 bushels a day, about $45. When we have to use frozen bait it's about $4 a bushel.

So we're growing the lobsters. We're feeding them every day.

Maine Profiles

Feeding The Lobsters



John Dyer: he spends $3,000 a year just for bait

JOHN A. DYER, 64, of Douglas Street in Brunswick, fishes out of Dyer's Cove on Sebascodegan Island. His boat, the Linda Ann, is named after his daughter and is hauled out for the winter close by the old family place where Mr. Dyer and his father were born.

Interview and photo by Lynn Franklin

GRANDFATHER lived here but he fished the whole coast. He went on large sailing vessels and when they'd come into Boothbay he'd walk home. 'Course he'd go mackeral fishing, whatever he could get to do. He worked in Bath Iron Works also.

My father used to go seining across the bay. He used to bait big boats, Georgia fishermen, to go handlining on the Banks. The big boats got their ice at Goddards, clear fresh water ice.

I started in just a youngster, had my first motor boat when I was 14. That boat had a Myannis 1 cylinder and I broke my arm right off. It kicked me, so then I had to get somebody to go with me.

I guess there was a good deal to learn from my father, but a man has to learn things him self. You don't learn too much from somebody else. I tried what he did and if it didn't work out to my expectations, I'd try a different way.

Dad died two years ago at 91. He lobstered until he was 84. His last boat was built by Ronald Reed over to Boothbay. He had four or five boats and, of course, sail to begin with.

My boat down in the cove was built by Lindoll Wallace just down the cove from me. She's the Linda Ann after my daughter.

IT'S EASY ENOUGH fishing in this area and I can make a living. Ten or fifteen men are fishing it with me. I've got 1,000 traps and fish about 800 at the peak time in the fall. When the shedders come on, I have about 600. I go with a helper and we haul 450 to 475 a day. So I can haul a little more than half my gear every day.

It makes a difference if we go off shore, then we're hauling in deeper water and we've got the time spent getting out there. Then, I'm not so young as I was and I can't wrestle the traps around like I used to.

About tending to them, I don't lose more than six or seven a year out of 800. This trap here, I'm putting new heads in it and new ends. It was built in '68. I'll put it right back to fishing this year. The worms have been in it, but she's still alright.

Sometimes summer people haul my traps, but then there's another kind of person really seems to be making his living at it. Going from place to place just hauling other people's traps. Sea and Shore has an office here and he gets help when he needs it. I suppose a fellow like that is hard to catch and this is a big area for one officer to watch, although there have been times when the Sea and Shore were getting in the way of one another.

My boat is 37 feet and I use a Ford diesal. The last diesal lasted me 10 years and I put in a new one last spring. Cost me about $3400. My boat will be 12 years old this spring. She's holding up lovely. I had it fiberglassed when she was new, rough sanded and then covered with resin and cloth.

I laid on just one layer except where I haul, that's three. It holds up very well.

I don't lobster in the winter. This cove can freeze up like the North Pole, but this winter the January thaw melted it all out.

GRANDFATHER, built the house here on the cove where I was born. The old Dyer place about 200 years old, was up where the road goes and when the state bought it, father tore the old place down. They didn't do much farming. The farms are back up on the hill. You can find the old stone cellars in the woods where the first settlers made a go of it. They didn't settle around the water that early. Must have thought more about farming than about fishing. In those days, fish weren't worth anything. Father used to sell lobsters for two cents or three cents each, no matter how big they were. They made the best living from the water shucking clams for the Portland market. They were used for handlining bait.

I sell now to a cooperative. We've had it for more than 18 years and we've hired a manager, Robert Waddle. He's a good man, almost always able to get bait to us.

We most generally use redfish from the draggers. Much of it comes from Canada through Rockland.

My traps are a third again bigger than my father's. Mine are 30 inches, three parlor traps. His had just one parlor. I've had some trouble with traps rolling over in deep water where the tide runs stronger. So I'm putting extra weight in them. These will fish in about 25 fathoms.

I think we're catching the lobsters as soon as they come to legal size and until then, most of them can take as much bait as they want and escape. We have a slat at the bottom of the trap a little wider apart than the others so the smaller ones can get out again after they've had their dinner.

By six or seven years they've learned their way around in a trap pretty well, been caught and thrown back dozens of times and been in and out of a trap for dinner maybe hundreds of times.

We've tried all kinds of traps and devices but I think there isn't but one way they'll fish. That's this trap right here.

We bait them with alewives, cunners, hake (the dinky and the cork hake) flatfish, that's flounders. Flounders stay on the longest. It's a harder bait.

We're always feeding the lobsters. For example, I'm just one lobster fisherman and I feed about $3,000 worth of bait a year and that's not even fishing winters.

Those fellows hauling around 700 traps a day, they use more than 15 bushels a day, about $45. When we have to use frozen bait it's about $4 a bushel.

So we're growing the lobsters. We're feeding them every day.

THIS WATER is pure except for the oil from outboard motors. Those engines spit a great deal of it into the water, not like our engines, which vent their exhaust into the air. But that's not really a problem, although it could be if the boats get too many.

I reckon I'll stay right here fishing, although I don't feel so spry as I used to. The legs are not holding up too well. A lobster fisherman spends his day on his feet you know. But fishing is what I'm used to and I think I'd rather be on the water than anyplace else.

At Stonington

Cooperative Works For Lobstermen

By WAYNE R. CLOUTIER

STONINGTON — The Stonington Lobster Cooperative is one of Maine's oldest and most successful fishing cooperatives. During a recent interview, manager Aldo Ciomei explained why.

"Through the cooperative we're able to offer fishermen a better way of life. Our proven ability to do so has kept the cooperative going and prospering," Ciomei pointed out.

The Stonington Lobster Cooperative draws its members from Swan's Island, Deer Isle, Sunshine, Brooklin and Stonington. Some 75 or more boats are represented in the cooperative.

The cooperative owns its own trucks and transports sea food products to the large metropolitan markets. Boston is the principal market for the cooperative. However, on occasion sea food has been taken as far away as New York and sold. In this way the fishermen realize higher profits for their work.

The cooperative markets scallops, shrimp, lobsters and a few clams. More than 250 boats fish the island waters Ciomei said. The fishermen sell their products to nine island buyers. Ciomei felt that an increasing number of wholesale buyers will leave the business as the cooperatives gain strength and grow in numbers.

"In 1948 when we got started there were about 20 wholesale buyers in business. That number has been more than cut in half. We feel that the cooperative has certainly played a role in creating this trend," Ciomei stated.

It is not difficult for a fisherman to become a member of the cooperative. A $10 membership fee and proof of intention is all that is required. However, there may be a change. Ciomei explained: "In the past we've found some fishermen have used membership in the cooperative as a means of obtaining a better price from a wholesale buyer. They say in effect 'give me a better price or I'll sell through the cooperative'. We're against this sort of thing."

Ciomei noted that some cooperatives charge as high as $200 for a membership. Another possibility under consideration is closing the cooperative's membership.

Testifying to the cooperative's prosperity is their recent purchase of Alley Brothers wholesale plant at Stonington. "By working together we've been able to expand the effectiveness of our cooperative," Ciomei stated.

Ciomei reported that lobstermen at Stonington are finding things "pretty tough" this time of year. But that's expected, and fishermen have learned to live with the "ups and downs" in their trade.

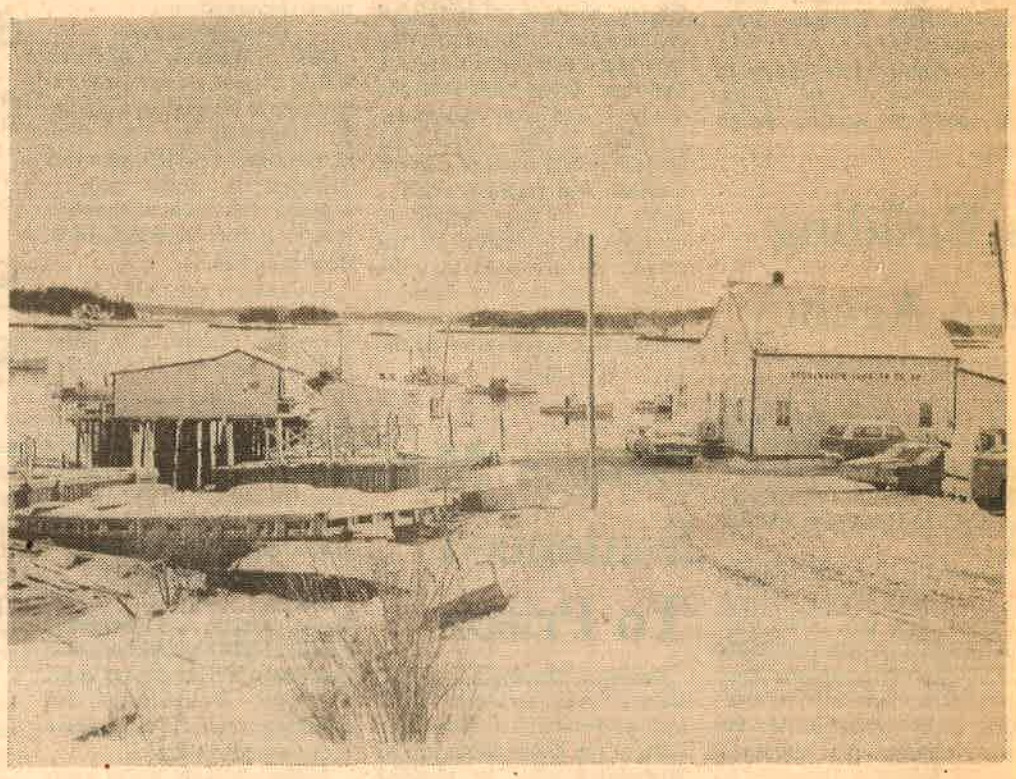
While the lobster cooperative will sell sea food to the public, Ciomei admitted that this is not the purpose of the association. "Primarily we are a wholesaler and this is what we're geared to do," he said.

Like the lobstermen of other areas, the Stonington Cooperative members are interested in seeing legislation passed to protect the industry that provides their living. While Ciomei was reluctant to act as spokesman for the cooperative members, he was willing to discuss what is being considered by lobstermen in general.

"It seems that most fishermen favor some extension of the limit. Most would like a 12-mile limit. Some feel it should extend out to 50 miles," he stated.

According to Ciomei, fishermen are also discussing a limit to the number of traps per boat. Some favor limiting the times boats can fish. A 4 p.m. daily limit has been discussed.

The Stonington cooperative has six employees and one manager. "We're all equal. We all share in the work of packing, loading and handling bait," Ciomei said. Any supplies fishermen need can be obtained through the cooperative. Supplies are bought in volume and offered for less than what they generally can be obtained for elsewhere.



Stonington Success

The Stonington Lobster Cooperative is one of the oldest and most successful of the fishing cooperatives. Seventy-five boats fish for the cooperative that is now considering limiting membership or raising its membership fee. (Cloutier Photo)

Bangor Daily News 2-22-73

12. "Set-over" ~~xxxx~~ fishing has no catch-per-trap advantage over daily fishing.

13. Gaffkya (red-tail) can have a heavy mortality impact upon impounded lobsters.

14. Lobster mortality may be caused by cannabilism, lack of oxygen, insufficient saline water or abrupt changes in salinity or temperature, blood bacteria (Gaffkya), predation, moulting, gas super-saturation of the water, chlorine, toxic metals, and shell disease, or a combination of two or more, as well as by commercial insecticides.

Economic and Technological

1. The use of electronic equipment in the Maine lobster fishery has increased the area of ~~xxxxxxx~~ fishing by exposing heretofore undiscover populations within regularly as well as irregularly fished areas.

2. Total catch is more dependent upon frequency of trap hauls than upon catch per unit of gear.

3. Advances in live lobster holding techniques have broadened the lobst market and offer even greater potentialities for the future.

4. Within certain reasonably defined limits, lobsters can be held alive for periods extending ~~xxx~~ to several weeks in length in recircula natural or artificial sea water.

Lobstermen delayed

The Monhegan town wharf was piled high with lobster traps but the trapping season which officially started January 1 was delayed. According to Douglas Odom the delay was caused by problems to a few lobstermen's boats. Thursday or Friday, all according to the weather, all 12 lobstermen will start the lobster trapping season.

The lobster trapping season, the only one set in the state, runs from January 1 to June 25. A total of 12 lobstermen on Monhegan Island work from dawn till dusk until the season ends. The history of the trapping season dates back at least 60 or 70 years when several islanders went to Augusta and requested that the season be made a state law to avoid the overharvesting of lobsters. Boats used by the lobstermen average 32 or 34 ft. and board a crew of one or two men.

The Monhegan lobstermen get their bait by a smack boat which belongs to a buyer. It brings the bait to the island and then returns to the mainland where it takes the lobstermen's catch to the company it represents.

The Lincoln County News (Damariscotta, Me.)
Vol. 98, no. 1 (January 4, 1973), page 1

P76

Journal of American Folklore

VOLUME 85, NUMBER 335 JANUARY–MARCH, 1972

Risk and Ritual: An Interpretation of Fishermen's Folklore in a New England Community

JOHN J. POGGIE, JR.,
and CARL GERSUNY

Risk and Ritual

An Interpretation of Fishermen's Folklore in a New England Community[1]

AMONG CERTAIN GROUPS and in certain behavioral settings in the United States, there is a greater use of ritual magic than is generally characteristic of the whole society. Coal miners and fishermen as well as rodeo performers and gamblers are in occupations and situations that are replete with ritual magic. These groups and situations have in common a high degree of uncertainty associated with them. The "retention" of rituals in these cases, in an otherwise highly secularized society, functions to bridge the gaps of uncertainty. This interpretation is based on the classical theoretical formulation proposed by Bronislaw Malinowski.

Malinowski first related magic to different types of risks; the risks were associated with the interrelationship between technology and habitat in fishing activities among the Trobriand Islanders. Concerning fishing among the Trobrianders he states:

> While in the villages on the inner lagoon fishing is done in an easy and absolutely reliable manner by the method of poisoning, yielding abundant results without danger and uncertainty, there are on the shores of the open sea dangerous modes of fishing and also certain types in which the yield greatly varies according to whether shoals of fish appear beforehand or not. It is most significant that in the lagoon fishing, where man can rely completely upon his knowledge and skill, magic does not exist, while in the open-sea fishing, full of danger and uncertainty, there is extensive magical ritual to secure safety and good results.[2]

It is interesting to note that there are two elements of unpredictability in Malinowski's discussion of magic among Trobriand fishermen. On the one hand, there is the question of certainty or uncertainty of the catch, while on the other hand there is the uncertainty or danger to the fishermen themselves. This same distinction appears to apply to such activities in the United States as gambling and rodeo

[1] This research, supported by the Marine Resources Committee and the Sea Grant Program at the University of Rhode Island, is part of a general socio-cultural study of a coastal New England community.

[2] Bronislaw Malinowski, *Magic, Science and Religion* (Garden City, N. Y., 1948), 30–31.

riding, where the risks are related most predominantly to "production" and "person" respectively. We feel that an important conceptual distinction must be made between these two types of uncertainty involved in "risk taking" activities. The distinction appears to be important in understanding why ritual is more prevalent in certain occupational groups and behavior settings than it is in others.

While it is true that man has continually increased his control over and predictability of the process of production, there has not been a comparable increase in technological control over the elements that endanger his life and limb. Man's cognitive image of his capacity to preserve his mortal self through rational technology can never reach the degree of confidence that he has in his ability to control his environment.

We thus wish to emphasize the distinction between ritual associated with production and ritual associated with protection of life and limb. We are hypothesizing that there is a differential rate of retention of ritual associated with these two types of risk. Production is much more secularized than the contemplation of mortality. This hypothesis applies to those domains of production where man has "allowed" technological innovation to occur. It does not apply to gambling, rodeo riding, or like activities, where the technology is purposely primitive.

Medical science is an example of an area in which great technological innovation has taken place, and the practice of medicine itself is largely devoid of ritual. On the other hand, when medical technology fails, as it always does in the end, it is a ritual practitioner and not the medical doctor who "takes care of us."

We have collected data on ritual from two occupational groups in a southern New England community. These two occupational groups are comparable in most respects, except that one is a high physical-risk occupation and the other a low physical-risk occupation. These are fishermen and textile mill workers respectively. Personal risk is higher among fishermen than among mill workers because of the differences in the environments in which the two types of work are carried out. Fishing is innately more dangerous because it requires a technological coping with a marine environment by a terrestrial-arborial species even to start the work.

Precisely how dangerous fishing is as an occupation can be seen from a comparison of data on fatalities in commercial fisheries and coal mining, the most dangerous of land occupations. In 1965 the commercial fisheries of the United States recorded 21.4 deaths per million man-days, while in coal mining there were 1.04 deaths per million man-hours or 8.3 deaths per million man-days. In marked contrast is the rate of fatal accidents in textile mills in the United States which is 0.8 per million man-days.[3]

A comparison of the rituals of fishermen and textile workers will be the basis of testing the above hypothesis.

Danger and Rituals of Avoidance

Let us first briefly review the nature of rituals of avoidance as reported in the literature. Ritual, according to Leach, involves "non-instinctive predictable

[3] Fatalities in fishing cited in Office of Merchant Marine Safety, *A Cost-Benefit Analysis of Alternative Safety Programs for U. S. Commercial Fishing Vessels* (Washington, D .C., 1971); fatality data in coal mining come from U. S. Bureau of the Census, *Statistical Abstract of the United States,* 91st ed. (Washington, D. C., 1970); data on fatalities in textile mills come from Bureau of Labor Statistics, *Injury Rates by Industry—1969* (Washington, D. C., 1971).

action . . . that cannot be justified by a 'rational' means-to-ends type of explanation."[4] In dangerous situations, especially where the perils besetting men are not susceptible to abatement by "rational" means, ritual is more likely to be developed than in safe and rationally controllable contexts. Avoidance rituals or tabus are thus an integral part of behavioral response to perceived danger.

Radcliffe-Brown referred to tabu as a "ritual prohibition" whose infraction results in undesirable change.[5] Tabu and danger are closely related, though in some cases the perception of danger arises from the tabu (as in the case of mother-in-law avoidance, perhaps, and certain food tabus), while in others it may be presumed that tabus arise in response to perils for which no technological remedy is known. Danger may thus be either the independent or the dependent variable in connection with tabu.

> So far as ritual avoidances are concerned, the reasons for them may vary from a very vague idea that some sort of misfortune or ill-luck, not defined as to its kind, is likely to befall anyone who fails to observe the taboo, to a belief that non-observance will produce some quite specific and undesirable result.[6]

Steiner also elaborates on the theme of danger in his definition of tabu as follows:

> Taboo is concerned (1) with all the social mechanisms of obedience which have ritual significance; (2) with specific and restrictive behaviour in dangerous situations. One might say that taboo deals with the sociology of danger itself, for it is concerned (3) with the protection of individuals who are in danger, and (4) with the protection of society from those endangered—and therefore dangerous—persons. . . . Taboo is an element of all those situations in which attitudes to values are expressed in terms of danger behavior.[7]

The perils of the sea, compounded by the hazards of the labors peculiar to fishing, create a context conducive to the survival of tabus even in a society among whose dominant values rationality ranks very high.

Procedures and Findings

In order to obtain information on frequency and types of ritual associated with the two occupational groups, we administered an interview schedule asking the following question on superstition, the emic term used by the fishermen and mill workers themselves to describe ritual beliefs and behaviors:

> Practically everyone has some superstitions such as walking under a ladder or knocking on wood. Are there any superstitions that are related to your type of work? If so, please describe as many as you can think of.

The interview schedule was administered to a sample of 27 fishermen and 29 factory workers. The sample of fishermen was a random one, while that of the factory workers was nearly a 100 percent sample of the work force in a small textile mill. Shoreville (pseudonym) is a predominantly "Yankee" coastal south-

[4] Edmund R. Leach, "Ritual," *International Encyclopedia of the Social Sciences*, vol. 13 (New York, 1968), 520–521.
[5] A. R. Radcliffe-Brown, *Structure and Function in Primitive Society* (New York, 1965), 134.
[6] Ibid., 142.
[7] Franz Steiner, *Taboo* (New York, 1956), 20.

ern New England township of some 15,000 residents. The individuals involved in the fishermen and factory worker samples are for the most part local Shoreville people. The two groups are also similar in the sense that they are both blue-collar occupations. In educational attainment and age, the two groups are also quite similar. The mean age for both the fishermen and factory workers is 37, while their average number of years of education are 12 and 11 respectively.

There are three main types of fishing technology in Shoreville: pot lobster boats that work during the day, draggers that also return to port each day, and draggers that stay out for several days at a time. We surmised that these types of fishing might vary in risk, pot lobstering being the least dangerous, as it is mainly an inshore, daytime activity, and multiple day-trip fishing being the most hazardous, as it takes the men away from protected waters and involves being out of reach of rapid assistance. One-day dragging would be intermediate because it is carried out in offshore waters but only on a daytime basis. Thus we had the possibility not only of comparing factory workers with fishermen but also of comparing different types of fishermen within the general occupational group. There is no corresponding variation in personal risk among the mill workers.

The results of our interviews are tabulated in Table 1 below. It is of particular significance to note that of the twenty-nine factory workers interviewed only one gave what he considered to be a superstition associated with his work. His response was, "I am afraid of getting my arms caught on something." This particular response appears to be more of an expression of a realistic fear than a ritual avoidance. On the other hand, the fishermen responded with numerous reports of superstitions associated with their work. The types of superstition and their frequency of mention are indicated in the following table. Only one out of twenty-seven fishermen reported that there were no superstitions associated with his work.

Fishermen's Tabus in Shoreville
($N = 28$; 6 pot lobstermen, 13 day fishermen, 9 trippers)

Frequency of times mentioned by all groups	Tabu
23	Don't turn hatch cover upside down—bad luck 9 – day; 8 – tripper; 6 – lobstermen
8	Don't whistle because it "whistles up a breeze" 6 – day; 2 – tripper; 0 – lobstermen
7	Don't mention "pig" on board 4 – day; 2 – tripper; 1 – lobstermen
4	Don't shave on a trip 2 – day; 1 – tripper; 1 – lobstermen
4	Don't turn against the sun, always into it 0 – day; 3 – tripper; 1 – lobstermen
4	Don't allow a man with a black bag aboard 1 – day; 1 – tripper; 2 – lobstermen
4	Don't serve beef stew aboard; it brings on a gale 2 – day; 2 – tripper; 0 – lobstermen
3	Don't bring women out on a trip 1 – day; 0 – tripper; 2 – lobstermen
3	Don't leave for trip on Friday 2 – day; 1 – tripper; 0 – lobstermen

3	Don't return a knife in any other way than the way it was given, open or closed 1 – day; 2 – tripper; 0 – lobstermen
3	Knock on wood for good luck 1 – day; 0 – tripper; 2 – lobstermen
2	Don't put hat in bunk 2 – day; 0 – tripper; 0 – lobstermen

Mentioned once by day fishermen:

Don't wash inside of wheelhouse windows
Don't wear a new hat—bad luck
No two-dollar bills—bad luck
No women on first trip of new boat
Don't wear yellow southwesters on board
Don't bring pork on board
Don't brag, it brings bad luck

Mentioned once by trippers:

Only coil a rope in the direction of the sun's path
Don't change name of boat
Don't leave dock twice in the same day

Mentioned once by lobstermen:

Don't wear black sweater
Red sky in the morning—warning of bad weather
Calm before the storm, perfect day—be apprehensive
See rat leaving the boat—don't sail
Never use the number 13 in speech
Thirteen pot trawls—bad luck
Metal boats sink
Always refer to boat as "she"

A striking pattern in these results is that the vast majority of the rituals are proscriptive in nature. That is to say, most of the ritual enjoins the avoidance of particular behavior patterns with the implication that misfortune will befall the actor if he does not avoid the proscribed behavior.

Discussion

The general hypothesis of this research is confirmed in that there is indeed considerably more ritual reported among the high-risk fishermen than among the low-risk textile workers. We argue that these differences are related to the differences in predictability and certainty of bodily integrity associated with these two occupational cultures. The textile workers are operating in a relatively safe environment, while the fishermen are operating in a much more hazardous one.

We have noted in our data that there is a preponderance of proscriptive norms or tabus reported by the fishermen. These beliefs deal with avoiding particular acts and are related to danger coming in the form of harm to the individual or his vessel. This situation is in contrast to prescriptive kinds of magic that prescribe necessary behaviors or acts, in this case in order to catch fish or to produce some other kind of output. Thus, if the general interpretation is correct, the prehistoric

paintings of animals on the cave walls at Lascaux are prescriptive magic in that they were to ensure, among other things, the catching of animals. There is no logical connection between the clearly prescriptive types of ritual that were reported by our respondents and predictability in the catch. Rather, the types of ritual reported to us are strictly items that relate to preservation of body and its extensions. In the case of boxing and rodeo participation, even though physical danger is high, we are dealing with a select group of men whose physical self is defined as "all enduring" and where we think the major concern to the actor is more with the outcome (production). We find according to limited sources that magic rather than tabu predominates.[8]

It can be argued that the value system of the larger society in which this fishing subculture operates places great stress on technological rationality. The notion that technology can overcome the environment is pervasive in all sectors of American society. To a great extent this value system is consistent with the reality of technological competence that has been brought to bear on catching fish. The fishermen we have studied have at their disposal such efficient fish-tracking systems as sonar, aircraft for spotting schools of fish, as well as other devices that indicate the presence of particular species. Also at their disposal are the ecological data that deal with distribution of fish populations over the yearly cycle and that make locating fish a relatively predictable operation.

Thus we argue in Malinowski's terms that the uncertainty factor of the catch has been subjected by and large to technological remedies. Although it is possible for a fisherman from Shoreville to return to port after a day's work with few fish, it is unlikely for a fisherman to return with no fish. Furthermore, fishermen who do not come back with a large catch on one day have the prospect of a large catch another day to make up for a deficiency of the bad day. In the course of the year, fishermen do bring home large quantities of fish and realize a relatively high economic return for their efforts, at least in the Shoreville case.

Let us now consider the part of the environment with which the ritual reported to us is associated. Although it can be argued that man has brought ingenuity and technological competence to the task of overcoming the hazards of venturing out into the open ocean, we know that fishermen do lose their lives and do receive injury at a high rate because of their occupation. In contrast to a day with a poor catch, there is no second chance in losing one's life or in sustaining permanent injury. Thus, there is great risk involved in a man's going out onto the water to catch fish—more risk to his personal self than to his economic self. The risk we are talking about is characteristic of man's utilization of the marine environment. As a terrestrial species man is extending himself considerably by simply going out onto the water to carry out his work activities; in contrast, in a factory man does not need to build an artificial land environment under himself before he can even begin his activities. It is not only the artificial land environment (boat or platform) that man has made, but also the medium in which this artificial land environment operates that presents considerable hazard to the fisherman. Storms, rough seas, obstructions in the water, sudden changes in weather conditions, and

[8] S. Kirson Weinberg and Henry Arond, "The Occupational Culture of the Boxer," *American Journal of Sociology*, 57 (1952), 463–464; personal communcation with ex-boxer–cowboy Tony McNevin.

other factors of the macro-environment along with the remote location of the work reduce predictability.

We had hypothesized that there would be a distinction between the rituals reported by pot lobstermen and those reported by day fishermen and multiple-day fishermen. The results, however, did not confirm this hypothesis. Each of the groups has about the same proportion of ritual beliefs except that there are certain specialized ones for particular types of fishing. Trippers, who are out for several days, have peculiar to their set of ritual beliefs items concerning food serving on board the boat and items related to the sleeping arrangements. The pot lobstermen, who do not usually prepare food or sleep on board, show zero responses to these items.

Although we do not have the data necessary to prove why this pattern occurred, we can suggest that the risk factors involved in each of those types of fishing have been equalized more or less. The pot lobstermen who generally do not venture out as far into the ocean, or stay out overnight in the darkness, are often operating in congested inshore waters devoid of ship-to-shore radio, radar, sonar, and other safety features that are a standard part of day and trip boats. Even though safety technology may tend to equalize risk between inshore and offshore fishing, it does not remove the basic danger, which is, according to our view, the basis of tabu associated with man's occupancy of the sea.

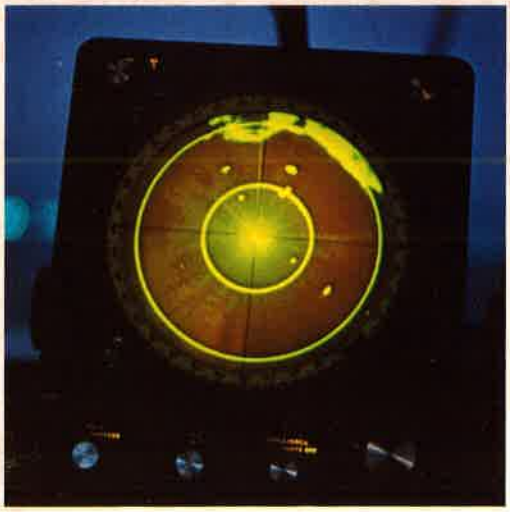
In our interviews with fishermen about their ritual beliefs, there was a degree of embarrassment expressed concerning these superstitions. Many times our respondents would disclaim believing in these superstitions but would often admit that they dared not "break the rule" of the superstitions aboard their own boats. The embarrassment, or ambivalence, as Goffman calls it,[9] associated with reporting about superstitions is, we feel, a manifestation of the divergence between the larger landbound culture that the interviewers represent and the occupational subculture of fishermen. Fishermen who are part of both cultures are sensitive to the values of general secularization that exists in the land setting. Nevertheless, while they are at sea they do observe the proscriptions of the tabus that embarrass them on shore.

It can be argued that the persistence of superstitions among fishermen is a relic of the past, "coming from a time" when fishing was much more hazardous than it is today. The wide distribution of the tabus reported seem to support this hypothesis.[10] However, this particular view of the "persistence of relics" says nothing about the functional nature of sociocultural traits. It can be argued that there is no such thing as a functionless trait and that "relics of the past" have contemporary functions. We have argued that, even though their form may be widespread, the contemporary functions of these rituals that are part of fishermen's folklore operate essentially as they did in the past—to help man cope with the uncertainties of operating in a personally hazardous environment.

University of Rhode Island
Kingston, Rhode Island

[9] Erving Goffman, *Interaction Ritual* (Garden City, N. Y., 1967), 179.

[10] Compare James G. Frazer, *The Golden Bough* (London, 1890); Richard M. Dorson, *Buying the Wind* (Chicago, 1964); Helen Creighton, *Folklore of Lunenburg County, Nova Scotia* (Ottawa, 1950).









raytheon marine company

1973

There is an uncommon bond amongst those of us who "go to sea". . . a unique tie of which a boat and its gear is an integral part.

A boat is a living, forgiving combination of materials formed into a shape that, more often than not, knows its capabilities and responds with consistency. The best of designs, however, cannot overcome, indeed will not overcome a total or even partial disregard for safety. To return to port with itself and crew intact, a boat asks only that it be given a fair chance to do so . . . and this requires seamanship — a basic understanding of what is right afloat. Courtesy is a part of it. Respect for one another is a part of it. Conduct is a part of it. But the foundation of it all is the responsibility that is such an intrinsic part of the authority that goes with the title — Skipper.

To be deserving requires that you know at all times what you are doing. Included in this knowledge is a wealth of information that is constantly changing. The presence of land, depth of water, proximity of other boats, wind, weather, tidal rise and fall, current direction and velocity, the abilities of your crew, the natural feel for your boat and a thorough understanding of your information gathering equipment.

The following pages present a wide selection of information gathering equipment designed and built by RAYTHEON to provide you with data you need for the safe and confident conduct of your vessel. Equipment that is easy to understand, easy to operate and dependable. Equipment that you will be proud of and grateful to have aboard.

One more word. There is no question that RAYTHEON is big by any measurement applied to it. And size has its advantages in terms of the resources we can bring to bear on a project. But we are also well aware that size alone means little if you, the customer, do not feel free to take advantage of the talent and service capability that this size self-generates.

We, therefore, invite your inquiry, comment, complaint or adulation. In its simplest terms, we want to talk with you. We want to help you get the most out of your electronic equipment and your hours afloat. We want to prove our service, not only as it applies to a repair, but as it so directly relates to your safety, confidence and pleasure.

cap'n fred

For 39 years Captain Fred E. Lawton has been as Kenneth Grahame put it "messing about in boats." Master, Navigator, Supervisor of construction, Deck hand. There are few like him. Those who could do it all before the advent of electronics and who literally "grew up" with the words RADAR, LORAN, RDF and FATHOMETER®.

Fred advises us and is a popular speaker on safety and navigation; that is when he isn't answering questions about what it's like to be sailing master of the America's Cup defender COLUMBIA or sailing coach of the 12 meter yacht NEFERTITI.

contents

raytheon marine dealer products warranty

This equipment is guaranteed free from any defect in workmanship and/or material for a period of one (1) year from date of purchase. Any part or parts that prove defective within this period will be replaced without charge after examination at our Factory Service Depots, provided such defect in our opinion is due to faulty material or workmanship, and not caused by tampering, abuse, or normal wear.

If difficulty is experienced, we suggest you contact the dealer from whom the unit was originally purchased. The dealer has complete technical information, or Raytheon will be glad to assist you directly with any problem. Your dealer can assist you in making arrangements to return the unit to one of our service depots if this is necessary.

All shipments are to be returned at consignor's expense. If the equipment is found to be defective within the terms of the warranty, the factory will prepay shipment of repaired or replaced equipment or parts.

Raytheon's apparatus or parts thereof which shall have been repaired or altered outside its plant, except by authorized Raytheon service agencies, are not warranted in any respect. The foregoing are the only warranties, expressed or implied, made by Raytheon except as to title.

SERVICE WORK: Raytheon warrants all service work performed by Raytheon employed engineers to be performed in a good and workmanlike manner, but no other warranty, expressed or implied, is made by Raytheon with respect to such work.

CONSEQUENTIAL DAMAGES: Raytheon shall not be liable for special or consequential damages of any nature with respect to any merchandise or service sold, rendered, or delivered.

NOTE: Separate product warranties apply for Model 2900 Radar, Commercial Radar, and Commercial Fathometer® Depth Sounders.

service centers

There are marine electronics specialists at Raytheon Service Centers and authorized dealers throughout the U.S. and in principal ports on every continent in the world. No matter where you sail or cruise the unrivalled performance of each Raytheon product is assured.

CALIFORNIA:
633 N. Marine Avenue
Wilmington, Calif. 90744
(Los Angeles)
Phone: (213) 835-0147
Raytheon Service Company:
1707 64th Street
Emeryville, Calif. 94608
Phone: (415) 655-4152
FLORIDA:
1107 N. Ward Street
Tampa, Fla. 33607
Phone: (813) 877-9418
2018 Walnut Street
Jacksonville, Fla. 32206
Phone: (904) 354-0333
2950 S.W. 30th Avenue
Hallandale, Fla. 33009 (Miami)
Phone: (305) 925-0072
LOUISIANA:
525 Jefferson Street, Jefferson
Parish, New Orleans, La. 70121
Phone: (504) 835-6491
MARYLAND:
103 Roesler Road
Glen Burnie, Md. 21061
(Baltimore)
Phone: (301) 761-4300
MASSACHUSETTS:
65 Cummings Park
Woburn, Mass. 01801
Phone: (617) 935-6710
NEW YORK:
239 26th Street
Brooklyn, N.Y. 11232
Phone: (212) 768-2511
OHIO:
3076 W. 117th Street
Cleveland, Ohio 44111
Phone: (216) 941-7716
TEXAS:
8417 Winkler Drive
P.O. Box 12334
Houston, Texas 77107
Phone: (713) 644-8043
WASHINGTON:
Fishermen's Terminal
Seattle, Wash. 98119
Phone: (206) 283-4895
IN EUROPE:
Raytheon Service Company
6-8, Siljangade,
2300 Copenhagen S, Denmark
Phone: AM 3311
OTHER WORLD AREAS:
Raytheon International Affairs
141 Spring Street
Lexington, Mass. 02173 U.S.A.
Phone: (617) 862-6600
Cable: Raytheonex

radar

RADAR, an acronym coined in the thirties for "Radio Detection and Ranging," in fact, now has little to do with radio but is still the seaman's best instrument for finding out "where and how far." In darkness, fog, or thick weather the radar scope is your chart that displays land masses, channel markers and the presence of other yachts throughout a full 360°.

MODEL 2900 RADAR

The standard by which all other pleasure boat radars are measured. Compact and lightweight, the 2900 is designed to fit a wide variety of wheelhouse, bridge or chart table configurations.

☐ particularly brilliant display ☐ 32 mile range ☐ 7000 watt peak power ☐ low 250 watt power drain ☐ tough, durable epoxy-coated exteriors ☐ non-fouling, fully enclosed weathertight antenna rotates at 30 rpm for continuous tracking of fast moving targets ☐ no sensitive waveguide necessary ☐ receiver electronics are built into the radome thus minimizing installation costs ☐ tunes as easy as your TV set ☐

commercial radar

Raytheon is the world's most experienced producer of radar systems for marine service — from the smallest fishing craft to the largest commercial ocean-going vessels. Over the last quarter century, we have fitted thousands upon thousands of merchant vessels of all flags — and many of these units have performed successfully for over 20 years. When you specify Raytheon, you specify performance and reliability.

MODEL 1006-20X

For installations requiring an exceptionally compact system, this 3 cm Mariners Pathfinder® Radar is indicated.

☐ powerful 20 kW peak power ☐ high definition presentations from 20 yards to 48 nautical miles ☐ 66 rpm antenna rotation ☐ transmitter PRF of 4 kHz ☐ improved PPI tube characteristics ☐ easily monitors targets with closing relative speeds up to 50 knots or more ☐ solid state electronics ☐ "Braille" knobs with distinctive shapes allow control by feel ☐ wide variety of optional accessories.

For complete specifications, see back of catalog.

communications

The ability to communicate with loved ones or business associates ashore, to talk with other vessels or to gain assistance, if necessary, provides a sense of well being and confidence. When the need or desire arises, your equipment must perform. Raytheon will.

vhf/fm radiotelephones

Transmit and receive up to 30 miles and beyond with unmatched clarity and tonal quality. Raytheon VHF/FM radiotelephones meet all FCC regulations, are not affected by weather or atmospheric conditions and are a cinch to install. All enclosures are fully protected against marine environment.

Ray-50

NEW FOR "73"

RAY 50 SYSTEM

The ultimate in VHF/FM communication. The Ray 50 has twelve two-way channels plus reception of both 162.40 and 162.55 MHz continuous weather frequencies.

☐ "Sea Watch" circuit monitors channel 16 and any other selected channel simultaneously ☐ built-in remote control ringer capabilities ☐ all solid state, 25W output reducible to 1W with front panel switch ☐ meets all current and proposed FCC regulations plus the new bridge-to-bridge Radiotelephone Act ☐ standard crystals include channels 6, 16, 26 and both weather frequencies.
Ray-50S Shore Station Model available.

Ray-50 Remote gives full remote communications with all functions of radio. Pre-assembled cabling kits available.

For installations where space is at a premium, Ray-50C Compact Remote without speaker ☐ Pre-assembled cabling kits available.

24/32 volt power supply accessory.

115 volt power supply accessory.

Ray-50C Compact Remote

Ray-50 Remote

NEW FOR "73"

RAY 46

Ideal small boat or supplementary phone. FCC approved, the Ray-46 offers economical 10 watt power and 12 channel (plus 2 weather) performance.

☐ all solid state circuitry offers low power drain ☐ factory installed crystals for channels 6, 16 and 1 weather ☐ available as do-it- yourself package, fully crystalled, complete with antenna (needs no ground plate) and all necessary mounting hardware ☐ rugged cabinet construction ☐ suitable for Limited Coastal Station service.

NEW FOR "73"

RAY 48

Big 25 watt output power with 12 channel coverage plus 2 weather. A compact performer of all solid state design, the Ray-48 is rugged and ready to meet any marine environment.

☐ meets current and proposed FCC regulations ☐ low power drain ☐ factory installed crystals for channels 6, 16 and 1 weather ☐ twelve 2-way communications channels plus 2 weather ☐ available as do-it yourself package, fully crystalled, with M-68W antenna and all necessary mounting hardware.

ssb

Long distance communication has never been so good. Raytheon single sideband radiotelephones are your vital link when cruising, fishing or ocean racing miles offshore. Fully complying with Parts 81 and 83 of FCC regulations, they offer advanced design and exceptionally high craftsmanship.

RAY 1208

Powerful performance at a moderate price. The reliable Ray-1208 has six channels for high seas frequencies.

☐ 80 watt PEP output ☐ low frequency intership service ☐ compatible AM for the 2-3 MHz marine band ☐ minimum power drain ☐ type accepted (FCC) ☐ Model AC101 antenna coupler for complete installation versatility.

RAY 1275

Single sideband designed for heavy duty commercial use now offered for pleasure boat service.

☐ 200 watt PEP output ☐ 20 channels divided into 5 groups cover 4, 8, 12, 16 and 22 MHz marine bands ☐ optional Ray-1275B substitutes 6 for 22 MHz coverage ☐ panel selectable modes include compatible AM and SSB.

☐ N-542 Linear Amplifier extends Ray-1275 output power to 1000 watts PEP.

cb

Citizen's Band for lowest cost, two-way communications offers 23 AM channels for short hauls of 5-15 miles. Minimizes interboat, boat-to-shore, car, truck or plane communications' interference.

RAYCOM III

All solid state transceiver is a rugged communications link for every vessel.

☐ 5 watt input covers all 23 AM channels ☐ crystals installed ☐ highly compact (book size) ☐ mounts on table, bulkhead or under car dash.

For complete specifications, see back of catalog.

raytheon fathometer® depth sounders

The Raytheon trademark Fathometer® has been synonymous with depth sounders for years. Called by most navigators the single most important piece of electronic equipment aboard, an accurate depth sounder is more than a device that tells you how deep the water is. It is a navigational instrument that alone or working in concert with other equipment can pinpoint your position or locate those elusive schools of fish.

Many Raytheon flasher/depth sounders now incorporate light emitting diodes (LEDs) to provide an exceptionally bright flash for superior viewing under full daylight conditions. A recent development of solid state technology, LEDs have extremely long life and operate with low current drain.

NEW FOR "73"

DE-736L

Endorsed by leading boat manufacturers as the finest flasher type depth sounder available. Big display provides instant readout from almost any distance.

☐ Front panel switch provides quick selection of 0-60 feet or 0-60 fathoms on same display ☐ no gears or belts ☐ mounts on handy tilting bracket that also facilitates removal for storage ☐ through-hull transducer is normally supplied ☐ super bright, solid state, light emitting diodes.

Sailboat and transom mount transducers are available. For complete information on Raytheon transducers and accessories, please refer to RAYTHEON TRANSDUCER CATALOG.

NEW FOR "73"

DE-738L

One of the newest and finest flasher/sounder units available offering dual range (60 feet/60 fathoms) versatility.

☐ front panel sensitivity adjustment for maximum performance at any depth ☐ no gears or belts to change ☐ identical dial calibration for foot/fathom ☐ light emitting diodes for easy viewing ☐ solid state circuitry for low power drain ☐ rugged, compact housing ☐ "U" bracket mount tilts or removes for storage ☐ through-hull transducer normally supplied; others available.

NEW FOR "73"

DE-728AL

An ideal smaller boat flasher that is very useful and practical in lakes, bays or rivers. Provides added safety for all water sports.

☐ 50 foot depth range ☐ rugged attractive housing ☐ extremely bright presentation ☐ light emitting diodes ☐ through-hull transducer and transom mounting bracket supplied.

For complete specifications, see back of catalog.

DE-732

The offshore cruiser's ideal shipmate offering power plus and terrific definition. The extra large scale features a light trap to dull reflections in bright daylight.

☐ 120 feet plus range ☐ highly effective at lesser depths over soft, muddy bottom ☐ solid state circuitry ☐ built-in noise and ignition interference ☐ "Tilt/Turn" pedestal mount for flexible installation ☐ normally supplied with through-hull transducer; other types available.

DE-734

A dual range flasher for coastal cruising at low cost.

☐ continuously updated readings from 60 feet to 60 fathoms ☐ no gear or belt change, range selection is electronic with front panel switch ☐ same dial calibration for both ranges (adjust GAIN control for operation) ☐ solid state, long life, low power drain electronics ☐ through-hull transducer supplied.

Sailboat and transom mount transducers are available. For complete information on Raytheon transducers and accessories, please refer to RAYTHEON TRANSDUCER CATALOG.

DE-726A

Even commercial service is possible with this rugged Fathometer® sounder. Dual depth scale in 2 electronically selectable ranges: 0-360 feet *and* 0-160 fathoms.

☐ no gears or belts to replace ☐ low power drain, solid state electronics ☐ operates at 12, 24, or 32V DC merely by selecting proper voltage tap ☐ overload protection via wide range voltage regulator ☐ all aluminum, rustproof, splash proof cabinet ☐ a variety of transducers may be ordered.

DEPTH ALARM - MODEL 300

Adds versatility to any depth sounder by providing an audible alarm when a pre-determined minimum depth is reached. Uses associated depth sounder's scale and gets power from same unit via a short connecting cable. Durable, marine environment protected case.

SPINNING LINK COUPLING

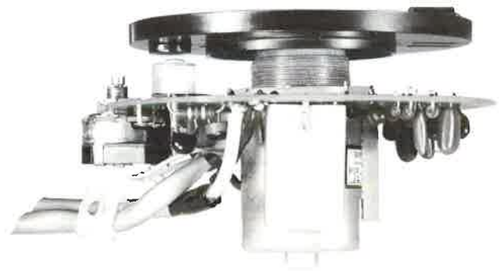
The average flasher depth sounder uses a small neon lamp mounted on a rotating disc to indicate depth. This system is inherently weak. The brushes used for transferring electrical power from the set to the lamp are subject to very high wear and corrosion.

Raytheon's patented technique, however, couples power from the set to the lamp or light emitting diodes with no physical contact. Two coils — one fixed, the other rotating — transfer power electromagnetically with nothing to wear out or necessitate adjustment.

MAGNETIC KEYING

There's another weakness in ordinary flashers. Breaker points — like in a car — are used to switch the ultrasonic signal on and off.

Again, Raytheon has a better way. A tiny magnet is secured to the spinning disc, with a small coil positioned at "6 o'clock" behind the calibrated sounder scale. Each time the magnet rotates past the coil, an induced voltage triggers the off-on pulse circuit. Once more, no contact and nothing to wear out.



For complete specifications, see back of catalog.

fathometer® depth sounder/recorders

Unsurpassed for quality and performance. Designed for safety and reliability. Raytheon sounder/recorders offer an invaluable permanent record of bottom contour for safe navigation and pinpoint fishing.

DE-725C

One package equals two highly sophisticated information gathering instruments. Flash to 360 feet, record to 300 feet with this flashing light depth sounder and moving chart recorder.

☐ dual range selection of either 50 or 150 feet per phase electronically ☐ no gears or belts to change ☐ simultaneous flasher/recorder operation or — "paper saving" independent flasher operation ☐ auto shift recording expands total depth range into separate phases for maximum clarity ☐ manual shifting unnecessary, automatic phase shifts when depth changes ☐ solid state electronics in aluminum cabinet housing ☐ through-hull transducer normally supplied ☐ DE-725C is sensitive enough to clearly record underwater thermals, fish schools, even individual large fish ☐ best of all . . . price is surprisingly low.

DE-750

Tremendous accuracy is yours with this powerful all digital sounder. Designed specifically for pleasure boat operation.

☐ three-number digital display indicates depth to 360 feet ☐ built-in audible depth alarm is a standard feature, continuously adjusts from 2 to 20 feet ☐ ±2% accuracy down to maximum depth ☐ easy viewing, even in bright daylight, from edge lighted panel illumination ☐ long life, low power drain, solid state electronics.

DE-735A

Perfect for deepwater fishing and pinpoint navigation. Patented "Grayline" feature shows bottom trace in gray shades, lets you target fish down to 618 feet or 156 fathoms. Depth divided into four phases, maximum calibrated fathom range occurs on Phase 3. Deeper readings (to as much as 206 fathoms) obtained over hard bottoms by using uncalibrated Phase 4 range with readout on Phase 2 (plus 100 feet).

☐ continuously variable chart speed ☐ as much as 200 hours operation for cruising economy ☐ precise navigation ☐ solid state electronics operate on any voltage from 10.5 to 45V DC ☐ heavy-duty aluminum cabinet ☐ through-hull and keel-mount transducers available.

DE-731

A powerful, commercial-grade Fathometer® recorder. Depth range to 410 feet or fathoms is electronically selectable from front panel switch. Range divided into four overlapping phases (0-110, 100-210, 200-310, 300-410) for maximum clarity.

☐ solid state electronics ☐ continuously variable chart speed ☐ whiteline operation ☐ fix marking switch and chart illumination control ☐ cast aluminum cabinet is spray and drip proof ☐ variety of heavy duty transducers are available.

Sailboat and transom mount transducers are available. For complete information on Raytheon transducers and accessories, please refer to RAYTHEON TRANSDUCER CATALOG.

For complete specifications, see back of catalog.

navigation aids

Electronic navigation aids from Raytheon provide you with a perfect fix easily, reliably, precisely — every time, in any weather. Add more safety and convenience to your boating activities . . . specify Raytheon.

NEW FOR "73"

NA-115 LORAN A RECEIVER

Raytheon's NA-115 offers not only autotracking but fully automatic acquisition of 2 Loran signals. Switch the unit on and you have "hands-off" operation. Scope presentation allows manual check for skyways' observation, etc.

NA-105 LORAN A RECEIVER

Permitting accurate fixes to 1500 miles, the NA-105 3-channel receiver is the maximum instrument for offshore navigation. Receives all Loran A signals on 1850, 1900 and 1950 kHz.

☐ simple operation: establish correct presentation on CRT, read signal directly from digital display ☐ information applies directly to Loran charts ☐ conversion kits or tables not necessary ☐ clearly identified, convenient front panel controls ☐ solid state circuitry requires less power than a 40-watt bulb ☐ rustproof cabinet mounts on tabletop or above chart table.

NEW FOR "73"

NA-110 LORAN A RECEIVER

Automatic tracking version of the NA-105. Just manually acquire the signal and the NA-110 will continuously track giving update on line of position. Momentary signal loss or noise burst will *NOT* cause loss of LOP.

NEW FOR "73"

RAY-DF-20

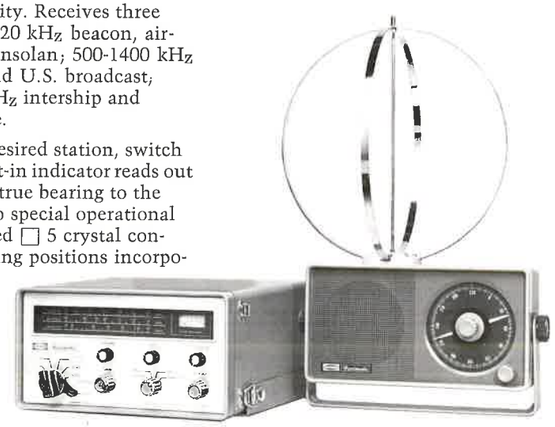
The professional's choice. Extremely high sensitivity for quick, accurate direction finding on beacon, marine and broadcast bands.

☐ Ferrite antenna rotates full 360° ☐ adjustable 360° azimuth scale ☐ VHF/FM crystals for channel 16 (Safety) and 2 ESSA weather ☐ all solid state, operates from "D" type flashlight cells or rechargeable nickel cadmium batteries ☐ telescoping antenna for accurate sense determination and VHF reception.

NAVIMATIC AUTOMATIC DIRECTION FINDER

Reduce human error to a minimum. Get automatic bearing fixes quickly, automatically with no 180° ambiguity. Receives three bands: 190-420 kHz beacon, aircraft and Consolan; 500-1400 kHz Canadian and U.S. broadcast; 1400-3500 kHz intership and ship-to-shore.

☐ tune in desired station, switch to ADF; built-in indicator reads out magnetic or true bearing to the station ☐ no special operational skills required ☐ 5 crystal controlled spotting positions incorporated for precise dial-setting to often-used frequencies ☐ fixed antenna loop mounts above deck, no moving parts to maintain ☐ rustproof aluminum cabinet designed to resist marine environment.



NEW FOR "73"

RAY-250 HAILER

A multi-purpose aid in fog or darkness. 25 powerful watts of loud hailer, listener, fog horn, signaler, intercom or auxiliary amplifier at the flip of a switch with very low drain. As a sensitive listening device, picks up distant surf, bell buoys, etc.

☐ ideal amplification for speech, music, phono, or tape recorder ☐ 3-station intercom (with auxiliary speakers) ☐ automatic fog horn programmed for international waters, inland waters and Great Lakes ☐ tiltable, rugged cabinet easily removable for storage ☐ completely protected for marine service.

RAY-24

A high stability receiver designed for monitoring SSB, AM and CW signals in high seas bands.

☐ 24 crystal controlled channels cover 4-22 MHz range ☐ few controls, simple operation ☐ high sensitivity and selectivity ☐ clarifier control, squelch, wide range AGC ☐ available with optional WWV time tick ☐ rugged, environmentally protected cabinet ☐ all solid state for low power drain.

For complete specifications, see back of catalog.

raytheon webster marine antennas

Acclaimed worldwide for quality, reliability and performance. RAYTHEON WEBSTER MARINE ANTENNAS are designed by experts to meet the most exacting demands of the yachtsman. Maximum radiated power for any application plus styling, accessories and price are just a few of their features.

There's a Webster antenna ideally suited for all RAYTHEON radiotelephones. Plus a wide variety of accessory mounts, brackets, laydown hooks and extension columns.

For dependability, performance, styling and seaworthiness — specify Webster. For complete details on our full antenna line, send for a new antenna catalog.

VHF

M-68W

This newest, fully streamlined antenna operates over marine VHF range. Provides 3db gain; universal ball mount; no ground plate is required.

M-69

Unique dual colinear antenna configured to provide 6db gain, completely factory pretuned, needs no ground plate. Sturdy enough for commercial use. 9¼ feet overall height.

M-70

Stacked dipole system for big 9db gain. Range far exceeds any other shipboard antenna. Unit comes complete and pretuned. 21 feet overall height.

M-71 and M-71A

Two new sailboat antenna models provide 3db gain. Mast mounting.

AM/SSB

M-24 and M-25

Specifically designed for high seas multiband use, these two models operate electronically with no moving parts. Streamlined traps automatically establish correct resonance for band in use. 19½ feet overall height.

M-40

Center-loaded design covered in protective white fiberglass. Top whip is also white fiberglass. 24 feet is overall height.

M-20

"Standard" Webster marine antenna. Center loaded with exclusive high power coil capsule. Aluminum column, fiberglass whip. Overall height is 23½ feet.

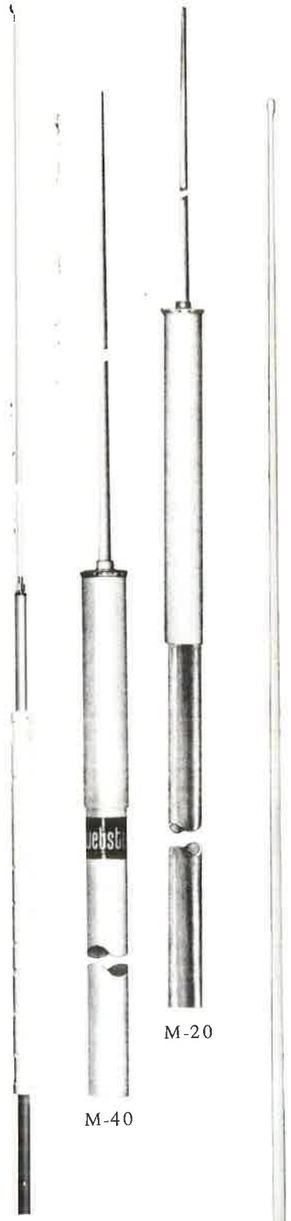
CB

M-36, M-37 and M-38

Three new models. Finest antennas anywhere for 27 MHz Citizens Band. Mounting sizes match VHF/FM antennas. Antennas are sealed, protectively plated and seaworthy.

ACCESSORIES

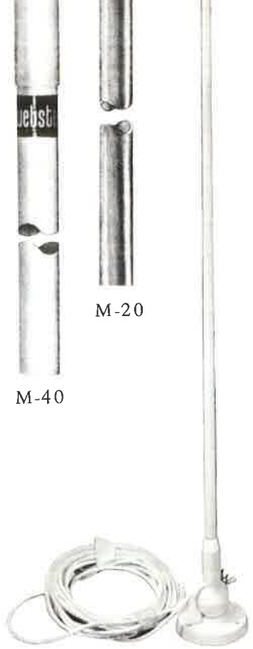
A complete assortment of mast, cabin, swivel and deck mounts are available as accessory items for Webster marine antennas.



M-20

M-40

M-24
M-25



M-68W

specifications

vhf/fm radiotelephones

cb

MODEL	RAY 50	RAY 48	RAY 46	RAYCOM III
FREQ. RANGE Transmitter	156.275-157.425 MHz	156.3-157.422 MHz	156.275-157.425 MHz	26.96-27.255 MHz
Receiver	as above, also: 161.6-162.55 MHz	as above, also: 161.6-162.55 MHz	as above, also: 161.6-162.55 MHz	
CHANNELS	12, plus 2 weather	12, plus 2 weather	12, plus 2 weather	23
FREQ. CONTROL Quartz Crystals	YES	YES	YES	YES
SIZE/WEIGHT Radio-telephone	4½"H, 12"W, 15¼"D 8 lbs.	3¼"H, 8"W, 8¾"D 6 lbs.	3⅞"H, 11"W, 9¼"D 7½ lbs.	2½"H, 5¾"W, 8⅛"D 5½ lbs.
POWER INPUT	NA	NA	NA	5W
POWER OUTPUT	25W*	25W*	3W*	3W
OPERATING VOLTAGES	12V DC** (13.6 nom.)	12V DC** (13.6 nom.)	12V DC** (13.6 nom.)	12V DC** (13.6 nom.)
POWER REQUIREMENTS Receive	0.5A	0.12A	0.12A	
Transmit (modulated)	7.0A	6.0A	5.0A	1.2A
MODULATION	FM 16F3	FM 16F3	FM 16F3	AM 6A3
RECEIVER SENSITIVITY	0.5 μV for 20db quieting	0.5 μV for 20db quieting	0.5 μV for 20db quieting	1 μV for 10db S + N/N
SQUELCH, NOISE LIMITER		ALL UNITS		
SELECTIVITY	EIA at least 80db adj. channel	EIA at least 65db adj. channel	50db adj. channel at least 65db adj. channel	60db @ 6 kHz 60db @ 60 kHz
RECEIVER AUDIO OUTPUT	3W	3W	3W	Greater than 2W
DUAL CHANNEL MONITOR	YES	NO	NO	NO
EQUIPMENT SUPPLIED	Crystals for channels 6, 16 and 26, plus 2 weather	Crystals for channels 6 and 16, plus 2 weather	Crystals for channels 6 and 16, plus 2 weather	Supplied w/ all crystals for 23 chan. oper. p-t-t mic.
FCC TYPE ACCEPTED	YES	YES	YES	YES
REMOTE CONTROL PROVISIONS	YES	NO	NO	NO

†Available as install-it-yourself "package" w/crystals for channels 6 and 16; also an M-68W high gain antenna. Equipment is factory pretuned. Install it yourself.

*Reducible to 1 watt or less.

**See auxiliary power supplies for other voltages.

RAY-50 Remote: 4⅞"H (inc. bracket), 14½"W (inc. bracket), 5½"D.

RAY-50 Compact Remote: 3½"H, 7"W, 4¾"D

loran

	NA-105	NA-110	NA-115
LORAN "A" CHANNELS (Frequencies)	Channel 1, 1950 kHz Channel 2, 1850 kHz Channel 3, 1900 kHz	Channel 1, 1950 kHz Channel 2, 1850 kHz Channel 3, 1900 kHz	Channel 1, 1950 kHz Channel 2, 1850 kHz Channel 3, 1900 kHz
RANGE OF DELAY	0-9,999 microseconds	0-9,999 microseconds	0-9,999 microseconds
OPERATING MODE	Manual	Autotracking	Dual channel Auto tracking Automatic acquisition
RECEIVER TYPE	Superheterodyne	Superheterodyne	Superheterodyne
RECEIVER SENSITIVITY	< 1 μV	< 1 μV	0.4 μV
S + N / N	> 14db	> 14db	> 10db
DIFFERENTIAL GAIN	> 90db	> 90db	120db
OPERATING VOLTAGES	12 to 24V DC 32V DC (special)	12 to 24V DC 32V DC (special)	12, 24, 32V DC (specify)
POWER REQUIREMENTS	40 watts	40 watts	45 watts
SIZE (incl. mtg. brackets)	11¾"H 7½"W 17⅜"D	11¾"H 7½"W 17⅜"D	11"H 16⅞"W 14⅞"D

fathometer® depth sounder/recorders

	DE-728AL	DE-750	DE-732	DE-734	DE-736L	DE-738L	DE-725C	DE-726A	DE-735A	DE-731
DEPTH RANGE	0-50′	0-360′	0-120′	0-60′ 0-60 fath.	0-60′ 0-60 fath.	0-60′ 0-60 fath.	0-360′ flasher 0-300′ recorder	0-360′ 0-120 fath.	**Feet** or **fathoms:** Phase 1: 0-168′, 0-56 fath. Phase 2: 150-318′, 50-106 fath. Phase 3: 300-468′, 100-156 fath. Phase 4: 450-618′, not cal.	**Feet** or **fathoms:** Phase 1: 0-110. Phase 2: 100-210. Phase 3: 200-310. Phase 4: 300-410.
VOLTAGE, CURRENT	12V DC @ 0.10A†	12V DC @ 1.5A	12V DC @ 0.12A†	12V DC @ 0.25A†	12V DC @ 0.25A†	12V DC @ 0.25A†	12V DC @ 0.14A†	Adjustable, 12,24, 32V DC @ 0.30A	12V DC @ 10 watts 24/32V DC @ 26.5 watts Kit available for 115V AC	115 (or 220/240) V AC @ 40 watts or 32V DC @ 1.2A. 12 and 24V adapters available.
SOUNDING RATE	960/min.	300/min.	1200/min.	**Feet** 240/min. **Fathoms** 400/min.	**Feet** 240/min. **Fathoms** 400/min.	**Feet** 240/min. **Fathoms** 400/min.	720/min. on Range X1 240/min. on Range X3	**Feet** 400/min. **Fathoms** 200/min.	**Feet** 166/min. **Fathoms** 83/min.	**Feet** 270/min. **Fathoms** 45/min.
FREQUENCY	200 kHz	200 kHz	200 kHz	200kHz	200 kHz	200 kHz	200 kHz	125 kHz	125 kHz	40 kHz
ACCURACY	±5%	±2%	±5%	±5%	±5%	±5%	±5%	±5%	±5%	±1% adjustable w/internal control.
CHART ADVANCE SPEED	NA	NA	NA	NA	NA	NA	38″/hr. on X1 12.5″/hr. on X3		Cont. adjustable 4 to 40″/hr.	Continuously adjustable 4 to 40″/hour.
CHART ROLL LENGTH	NA	NA	NA	NA	NA	NA	50′		60′ 7″ wide	60′
SIZE	4½″ dia. 4½″ deep 3½ lbs.	4.8″H, 7″W, 9½″D	6½″ dia. 4¾″ deep 4½ lbs.	4½″ dia. 4½″ deep 3½ lbs.	8½″H, 10″W, 6″D 7 lbs.	5¼″H, 6¼″W, 5″D 7 lbs.	6½″H, 10½″W, 5¼″D 7 lbs. 10 oz.	10½″H, 9½″W, 4½″D 7½ lbs.	16″H, 15½″W, 6½″D 21 lbs.	19″H, 15½″W, 8½″D 40 lbs. approx.
TRANSDUCER SUPPLIED	Thru-hull type 7252D w/transom bracket	Thru-hull type 2445D	Thru-hull type 2445D‡	Thru-hull type 7252B	Thru-hul type 2445D‡	Thru-hull type 7252E	Thru-hull type 2445D‡		7041 thru-hull	See options below
TRANSDUCER OPTIONS		Keel mount 2445B	Keel mount 2445B Transom mount 2445T	Keel mount 7252C	Keel mount 2445B Transom mount 2445T	Keel mount 7252F Transom mount 2445T	Keel mount 2445B Transom mount 2445T	Thru-hull 7041 Keel mount 7041K	7041K keel @ extra cost	Choice of thru-hull type 7193, keel mount type 7210 or steel hull piercing type 7510.

NOTE: All above transducers are bronze. 7252A, 2445D, 2445B, 7041, 7041K are supplied with 20 foot cables. Models 7510, 7193 and 7210 have 30 foot cables.

† #7264 adaptor available for 24/32V DC.

‡Transom mount adaptor available, 2445-5005GI.

ssb radiotelephones

	RAY-1275A/B	RAY-1208	RAY-24
FREQ. BANDS	Rec. & transmit 4050-4150 kHz 6200-6460 kHz* 8180-8280 kHz 12,325-12,425 kHz 16,460-16,560 kHz 22,000-22,100 kHz** *RAY-1275B only. **RAY-1275A only.	Rec. only 4350-4450 kHz 6200-6460 kHz* 8725-8825 kHz 13,120-13,220 kHz 17,275-17,375 kHz 22,650-22,750 kHz	Chan. 1 – 2-3.5 MHz Chan. 2 – 2-3.5 MHz Chan. 3 – 2-3.5 MHz Chan. 4 – 4.05-6.53 MHz Chan. 5 – 6.2-8.28 MHz Chan. 6 – 6.2-8.83 MHz Factory programmed for A3a, A3h and A3j	4-22 MHz marine band
CHANNELS	20		6	20 channels (3,4 MHz, 3,6 MHz, 2,8 MHz, 3,12 MHz, 3,16 MHz, 5,22 MHz) plus weather chan.
FREQ. CONTROL Quartz crystals	Yes, in ovens		YES, in ovens	YES
FREQ. STABILITY	±20 Hz		±20 Hz	0.0015%, 0°C to +50°C
VOLTAGE/CURRENT Receiver Transmitter (standby) Transmitter (modulated)	117V, 50-60 Hz AC 150 watts 175 watts average 500 watts average (max. power requirement, 600W)		12V DC (13.6V DC nom.) negative ground 0.8A 15.00A (voice peaks)	13.6V DC ±20% @ 0.7A nom. 34V DC ±20% @ 0.4A nom. 117V AC ±15%, 60 Hz, 15 watts nom.
POWER OUTPUT	High power, 200W, p.e.p. Low power, 150W, p.e.p.		80W, p.e.p.	NA
MODES OF OPERATION	Transmit/receive, upper sideband only A3h, compatible AM (carrier suppressed 3-6db) A3a, SSB w/pilot carrier (carrier suppressed 16db) A3j, SSB (carrier suppressed 40db minimum)		A3h, A3a, A3j	SSB (upper sideband), AM, CW A2, A3a, A3h, A3j
POWER SUPPLY	Separate unit. All solid state.		Can operate on 24, 32V DC or 117V AC with accessory power supply	Built-in. Operates on 12, 32V DC and 117 AC.
RECEIVER SENSITIVITY	< 1μV for 10db S+N/N ratio		1 μV for 10db S+N/N ratio	Less than 1 μV for 12db S+N/N ratio
SELECTIVITY	6db @ 2.8 kHz 60db @ 5 kHz		6db @ 3 kHz 60db @ 6 kHz	6db @ 2.4 kHz, 60db @ 5 kHz
AUDIO OUTPUT	2 watts		6 watts	2 watts minimum
VOX	YES, also p-t-t operation		NO, p-t-t operation	NA
SELECTIVE RINGING	Available as accessory		NO	NO
SIZE/WEIGHT Radiotelephone Power supply	20¼″H, 16⅜″W, 9¾″D, 51 lbs. 9″W, 7″H, 14¼″L, 33 lbs.		4″H, 12″W, 16⅞″D Built-in	3⅞″H, 11″W, 10″D, 7½ lbs.
CIRCUIT FEATURES	Automatic carrier and audio level control. Separate volume and RF sensitivity controls.		Automatic gain control. Clarifier control. Separate volume and RF sensitivity controls.	Squelch. Clarifier control.
FCC TYPE ACCEPTED	YES		YES (also with AC101 coupler)	NA

MODEL 1006-20X RADAR

ANTENNA — Vertically polarized, end fed, slotted wave guide	
Beamwidth	1.6° horizontal, 21° vertical (at 3db points)
Gain	29.5db
Horizontal sidelobes	−29db
Rotation	Continuous 66 rpm in 100 kt relative wind
Dimensions	22″ H, 6′ swing
Weight	130 lbs.
INDICATOR	
PPI	10″ diameter
Sweep rotation	Fixed deflection coils
FTE (False Target Eliminator)	3 mile range
Operating controls	Off-standby-on, tuning, FTC, STC, FTE, brilliance, range switch, heading line off, cursor rotation, marker intensity, gain, light dimmer
Bearing resolution	1.6°
Range resolution	1% or 20 yards, whichever is greatest
Minimum range	20 yards
Maximum range	48 n. mi.
Dimensions	16″H, 17″W, 25″D
Weight	56 lbs.
TRANSMITTER	
Range scale (n. mi.)	½ 1½ 3 3* 6 12 24 48
Range markers (n. mi.)	¼ ¼ ½ ½ 1 2 4 8
Variable range marker (optional)	0.4 to 48 nautical miles
PRF (kHz)	4 4 4 2 1 1 1 1
Pulse width (sec)	0.05 0.05 0.05 0.5 1.0 1.0 1.0 1.0
Average power (watts)	4 4 4 20 20 20 20 20
Peak power	20 kW, nominal
Operating frequency	9375 +30 MHz (X-band)
Dimensions (transmitter/receiver)	24″H, 22″W, 12″D
Weight (transmitter/receiver)	45 lbs.
*with FTE selected	
RECEIVER	
IF frequency	45 MHz
IF bandwidths	4 MHz and 15 MHz at −3db
Video bandwidth	13.5 MHz at −3db
Noise figure	11db
POWER CONVERTER	
System requirements	700 watts, total
Operating voltage	115V AC ±20%, 60 Hz 110V DC ±20% 24/32V DC ±20% (optional)
Dimensions	24″H, 22″W, 12″D
Weight	75 lbs.

NAVIMATIC RAY-DF-20

	NAVIMATIC	RAY-DF-20
BANDS	3	3
FREQ. RANGES	**DF/Receiver** 190-420 kHz — beacon, marine, aircraft. 500-1400 kHz — standard broadcast. 1400-3500 kHz — intership, telephone.	**DF/Receiver** 180-400 kHz — beacon. 0.54-1.6 MHz — standard broadcast. 1.6-4 MHz — intership, telephone. VHF/FM Channel 16 and 2 ESSA weather.
FREQ. CONTROL	Tunable 3 bands plus 5 crystals controlled marker channels in SW or beacon ranges.	Tunable on 3 bands. 2 crystal markers for marine band. 3 VHF/FM crystals installed.
LOOP ANTENNA	Two loops, spaced 90°.	Enclosed ferrite loop, rotatable through 360°. 360° azimuth indicator scale.
RATE OF LOOP ROTATION	Fixed, do not rotate.	Manually rotated.
ABSOLUTE COMPASS SENSITIVITY	18 μV/meter, beacon band. 15 μV/meter, broadcast band. 10 μV/meter, marine band.	25 μV/meter, beacon band. 20 μV/meter, broadcast band. 10 μV/meter, marine band.
BEARING ACCURACY, ADF.	±3° for 35 μV/meter signal at antenna through range 190-3500 kHz.*	±5° beacon.* ±4° marine.* ±3° broadcast.*
SENSITIVITY	More than 18 μV/meter in all bands for S/N of 6db.	More than 25 μV/meter in all bands for S/N of 6db. 2 μV/VHF.
BEAT OSCILLATOR	YES.	YES.
AUDIO OUTPUT	3 watts.	500 milliwatts.
VOLTAGE, CURRENT	12, 24, or 32V DC @ not more than 1.5A for any voltage. Accessory supply available for 115V AC operation.**	6V DC (uses 4 "D" type dry cells or 5 NiCd for power).
SIZE/ WEIGHT	**Console:** 5½″H, 10½″W, 12¼″D **Loop:** 13¾″D, 18″H **Indicator:** 5½″H, 10½″W, 3″D	8″H, 10½″W, 3¾″D, 6½ lbs. approx.
EQUIPMENT FURNISHED	Radio receiver. Radio compass indicator/ speaker unit. 25′ interconnect cable, loop to indicator/speaker console. 6′ interconnect cable, indicator/ speaker console to receiver console.	Built-in telescoping antenna.

*Exclusive of field and installation environment errors.
**Specify whether DC or AC. DC supply is switchable for 12, 24 or 32V DC.

MODEL 2900 RADAR

ANTENNA	Fixed radome; 33½″D, 16¾″H
Polarization	Vertical
Beamwidth	Horizontal 3°, vertical 22°
Horizontal sidelobes	−25db
Rotation speed	30 rpm in 80 knot relative wind
Bearing resolution	±1°
Range resolution	±2%
Minimum range	25 yards
Weight	Less than 50 lbs.
Rated ice load	5 lbs. per square foot
INDICATOR	
PPI	7″ diam., P14A or P7A phosphor
Operating controls	Off-Standby-On Gain Range markers On-Off Brilliance Panel lights On-Off STC FTC On-Off Range switch Tune Long pulse On-Off Rotatable cursor
Weight	20 lbs.
Dimensions	11½″H, 12½″W, 16 13/16″D
TRANSMITTER	
Operating frequency	9375 MHz ±50 MHz
Range scale (n. mi.)	½ 2 4 8 16 32
Range markers (n. mi.)	¼ ½ 1 2 4 8
PRF (kHz)	3 3 1.5 1.5 1.5 1.5
Pulse width (nsec)*	100 100 670 670 670 670
Peak power (kW)	7 7 7 7 7 7
RECEIVER	
Noise figure	11db (overall) nominal
Size/weight	Part of antenna unit
POWER CONVERTER	Regulated, high efficiency, solid state 115V AC ±15% @ 50-60 Hz 12/24/32V DC, −10% +25%
Power drain	Approx. 250 watts total system
Weight	30 lbs.
Dimensions	17¼″H, 12½″W, 7 13/16″D
ENVIRONMENTAL	
Humidity	95% @ −15°C to +55°C
Shock	5g (all planes)
Vibration	1g up to 50 Hz, ½g up to 100 Hz
Operating temperature	−25°C to +55°C, antenna −15°C to +55°C, other components

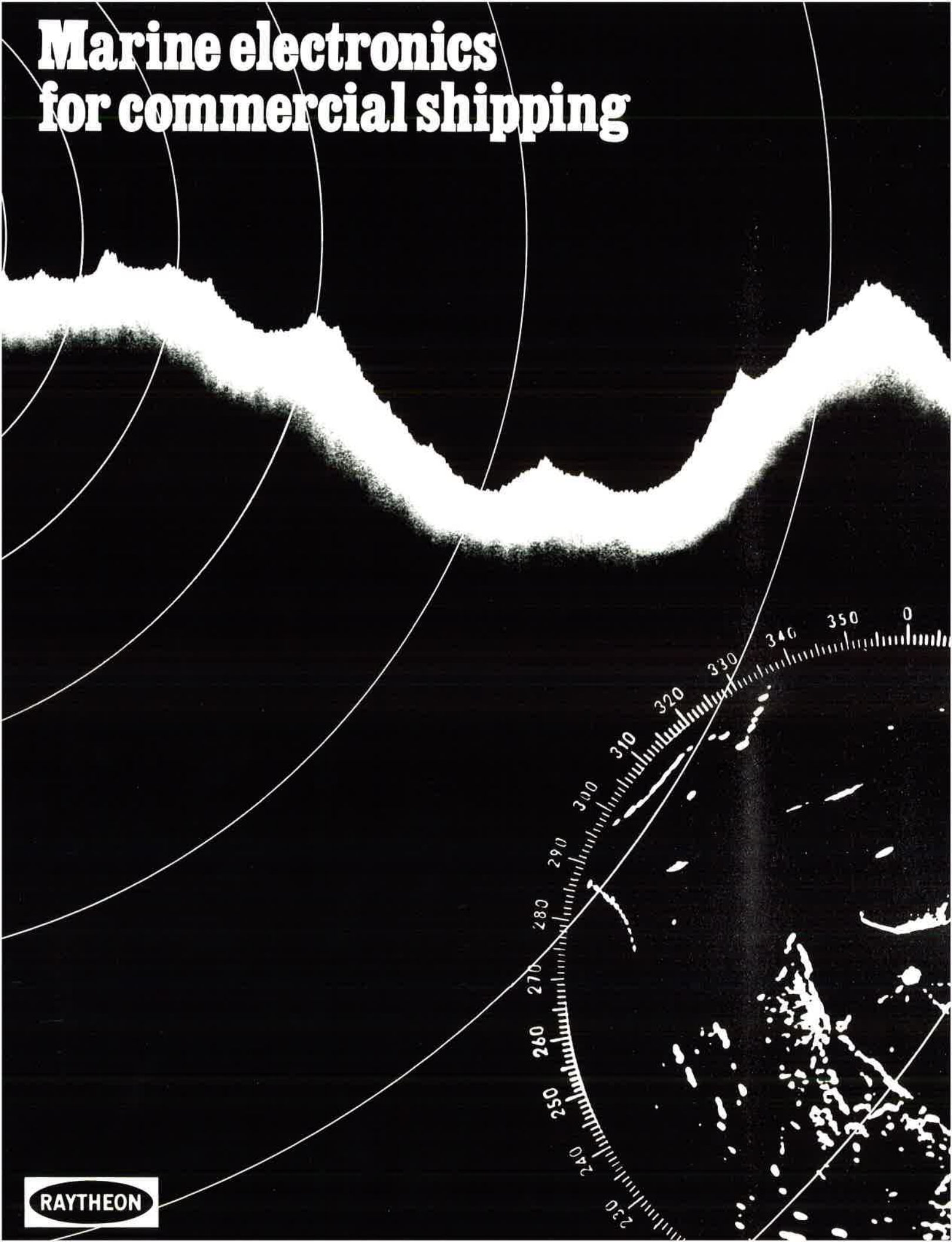
*Pull switch allows use of long pulse at short ranges.

RAY-250 HAILER

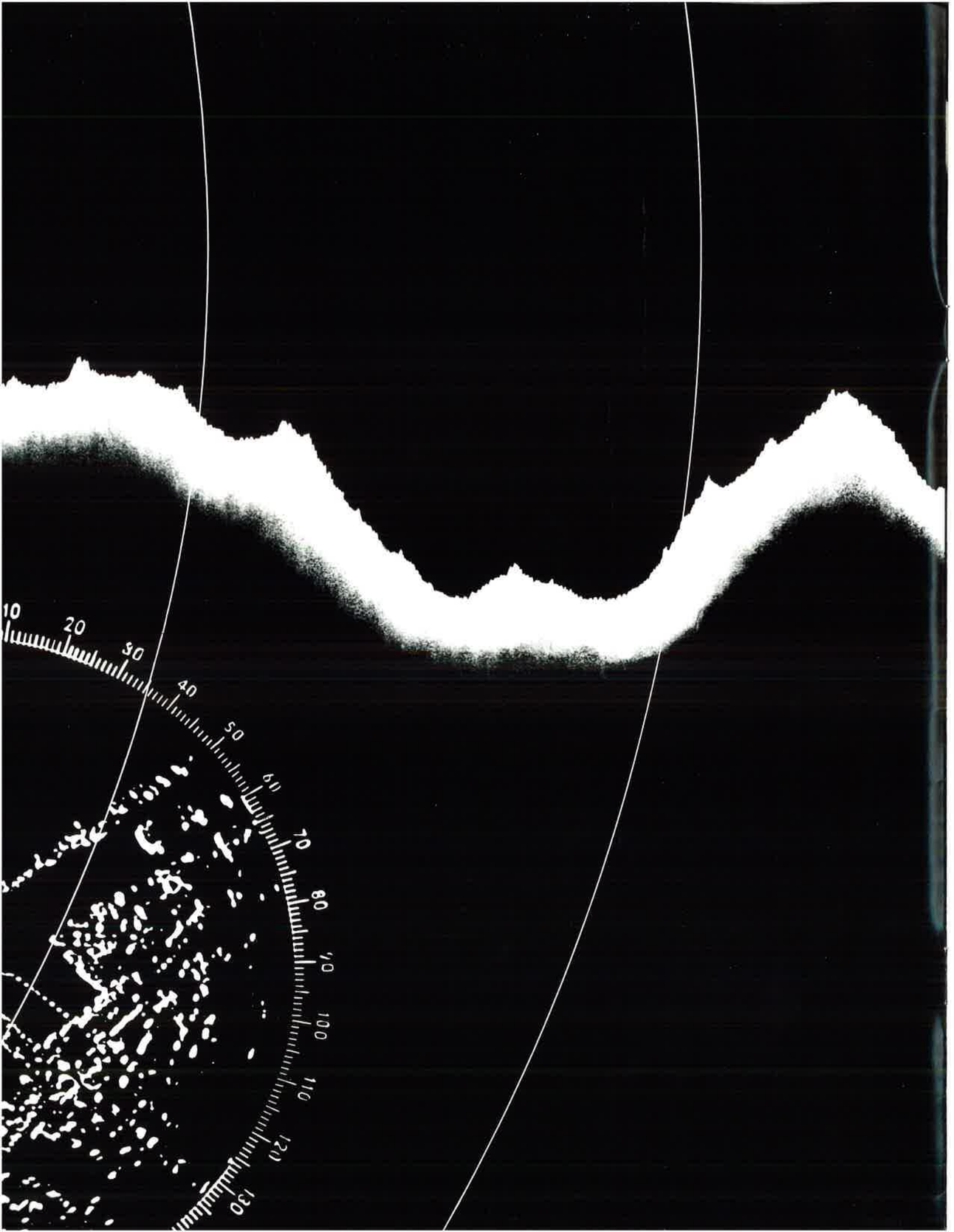
MODES	**Listen-hail:** P-t-t loud hail/listen or intercom. **Listen/horn:** Automatic fog alarm. **Auxiliary:** Amplify low level radio/phono/tape/speech-music.
VOLTAGE/ CURRENT	13.8V DC (operating range 11.7-15.9V DC) **Listen:** (zero signal) 13.8V @ 0.2A. **Listen:** (sig. producing 4W out.), 1.00A. 3db variation, 200-5000 Hz. 8W max. **Intercom:** (4W out.), 1.00A. **Loud hail:** (25W out.), less than 4.0A. 3db variation, 200-5000 Hz. **Foghorn/signal:** (25W out.), 4.0A. **Auxiliary:** (zero signal), 0.4A. Forward and aft deck speakers. **Auxiliary:** (25W out.), 4.0A.
AVAILABLE ACCESSORY SPEAKERS	Intercom speaker: 6¾″D, 6″ deep. Deck speaker: 11″H, 6½″W, 8½″D.
SIZE	Console: (w/bracket), 5″H, 12¼″W, 6″D.
EQUIPMENT SUPPLIED	P-t-t microphone w/coil cord. Deck speaker w/15′ cable.
OPTIONAL POWER SOURCES	Accessory adaptors for 24/32V DC (RAY-25-34) or 117V AC (RAY-25-115).

Specifications are subject to change without notice.

Marine electronics for commercial shipping



RAYTHEON



Raytheon, a history of innovative electronics

When your livelihood depends on safe, reliable navigation and communications at sea, you can only afford electronics that come on strong when you hit the switch.

Raytheon commercial marine electronics come on strong and stay on strong. Because we know day-in, day-out commercial duty requires equipment that is rugged and reliable. Equipment using the latest technology, design, and components. Manufactured for—not adapted to—the marine environment. With quality control and testing that guarantee performance.

Strong claims? Maybe, but we have the experience to back them up. In the first place, Raytheon is one of the largest electronic systems manufacturers in the world—and we've been in business for almost 50 years. During this time we've developed a tradition of innovation and quality: The first rectifier tube that broke radio's reliance on battery power. The first sonar and depth sounder. One of the earliest radars. Development of mass production techniques for radar magnetrons. Production, during World War II, of more radars, sonars, and depth sounders than any other manufacturer.

To date, more than 15,000 vessels have been fitted with Raytheon marine radar—and some of these units have performed successfully for over 20 years. Merchant ships, fishing vessels, and some of the world's largest towboats rely on our communications gear. Our familiar Fathometer® depth sounders are now in service for precision hydrographic survey, plus daily navigation aboard the largest supertankers.

When you specify Raytheon, you specify performance and reliability, backed by unmatched experience, supported by worldwide service. You are always sure with Raytheon, the other marine insurance.

Raytheon is the world's most experienced producer of radar systems for marine service. Over the last quarter-century we have installed more than 15,000 3 cm radars and 10,000 10-cm radars on merchant vessels of all flags. Plus more than 3000 dual radar installations including the fully computerized TM/CPA anticollision radar system for direct calculation of CPA (closest point of approach) and time to CPA.

High power, transistorized 3 and 10 cm Raytheon radars offer superb definition and picture brightness under even the most abnormal sea and weather conditions. High data rate true and relative motion displays, transmitter power to 60 kW, rugged slotted waveguide antennas (up to 12 feet) built to withstand extremely high wind and ice loadings—backed up by technical service facilities located at all principal ports on every continent—all add up to an unsurpassed line of marine radars available in a variety of models and configurations for any size vessel, any application.

10 cm ALL-WEATHER RADARS

Long range target detection under adverse weather conditions is assured with Raytheon 10 cm radars. These solid state systems consist of a 12-foot slotted waveguide antenna with 2.0° beamwidth, 60 kW transmitter with automatic pulsewidth and prf selection, and choice of either 12- or 16-inch relative or true motion displays. Special design features include extremely effective rain and sea anticlutter circuitry that enhance inherent clutter rejection of the 10 cm wavelength. High 60 kW peak power combined with high data rates and superior Raytheon display tube design produce a radar with brightness, clarity and performance second to none.

3 cm HIGH DEFINITION RADARS

Raytheon 3 cm marine radars are available in 8 different models, all totally compatible with our 10 cm radars for combined-system installations. These solid state X-band radars may be obtained with any arrangement of the following: 20 or 45 kW transmitter, 12- or 16-inch display, 6- or 12-foot slotted waveguide antenna. Selection depends only on ship size and operating requirements.

For example, Raytheon's 1645-12X radar system (16-inch display, 45 kW transmitter, 12-foot antenna, X-band) has become a favorite on towboats as well as supertankers because of its unequaled performance, versatility, and reliability.

ACCESSORIES

A variety of optional accessories are available for all Raytheon 3 and 10 cm radars to further enhance system versatility.

TM/CPA

Completely solid state display includes digital computer to calculate true motion. System enables fast, easy determination of CPA and time to CPA on true motion displays, or true course and speed on relative motion displays. Seven presentations are available, 4 relative and 3 true motion. On TM display, CPA and time to CPA of 8 targets are easily determined in only 4 minutes. Standard TM/CPA controls include plotting clock, joystick cursor positioner, adjustable time markers, interscan continuous bearing marker, automatic and instant reset, and drift—plus standard 16-inch display controls. Maximum use is made of integrated circuits mounted on military style boards. Typical units have operated at sea for periods exceeding 3000 hours without failure.

Reflection Plotter

To plot relative and true courses of other ships directly on top of the PPI, without parallax.

True Bearing Kit

Automatically positions the rotatable true bearing dial, through the ship's gyrocompass system, to instantly measure target true bearing and course. Available for 16-inch indicator only.

North Stabilizing Kit

Automatically stabilizes the radar display, through the ship's gyrocompass system, on north or any other desired heading.

Interswitch Unit

Permits interconnection of any two Raytheon radars for (1) instant availability of both 10 and 3 cm systems, (2) the added reliability of redundant system components, and (3) providing a choice of display indicators.

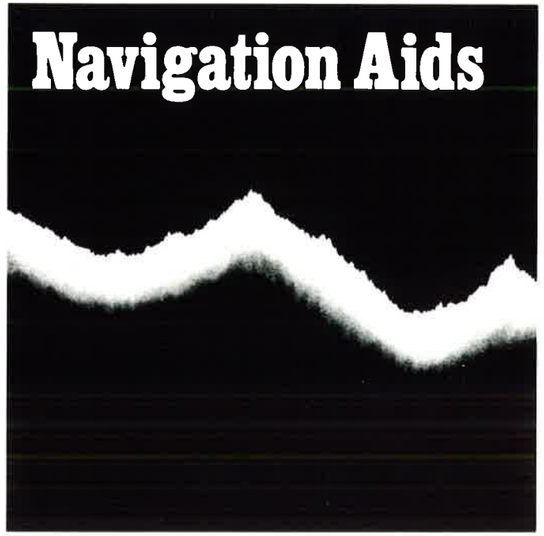
MODEL 1006-20X MARINERS PATHFINDER® RADAR

This is an all-new 3 cm marine radar for installations requiring an exceptionally compact system. Powerful 20 kW peak power provides high definition presentations from 20 yards out to 48 miles maximum range. Antenna rotation of 60 rpm, coupled with transmitter PRF of 4 kHz, and improved PPI tube characteristics, provides a continuous presentation of exceptional clarity—plus the capability to easily monitor targets with closing speeds as high as 50 knots.

Model 1006-20X Accessories

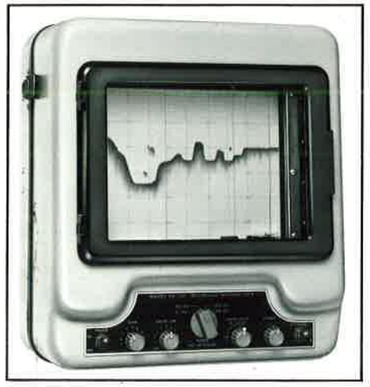
Options available with the 1006-20X include north stabilization from synchro or step motor input, reflection plotter, remote indicator, magnifier lens and a 3-digit variable range marker using digital counter techniques.

Navigation Aids



Commercial ship operators have known the quality and reliability built into Raytheon navigation equipment for decades. Today almost every class of vessel from the largest OBO carriers to the smallest gillnetters continue with Raytheon—precision Fathometer® recorders, Loran receivers and automatic direction finders. Equipment designed to last with solid state electronics, corrosion-proof packaging, rugged design.

FATHOMETER® RECORDERS



DE-731 Depth Recorder

Fathometer® recorder designed for big ship performance. Maximum definition over total range of 410 feet or fathoms, selectable electronically from front panel. Whiteline operation throughout four expanded depth phases provides outstanding fish detecting and navigation capabilities. Phase in use automatically recorded on chart paper. Chart speed continuously adjustable from 4 to 40 inches per hour with front panel control. Other convenient controls include fix mark and chart illumination. Single-package aluminum cabinet is spray and drip proof. Variety of heavy duty transducers available.

DE-735 Depth Recorder

Perfect for deepwater fishermen. Patented "Grayline" feature gives bottom trace in shades of gray, making fish targets easily seen over depth range of 618 feet or 156 fathoms. Range divided into four phases with feet or fathoms selected by simply changing a single gear. Highly conservative performance ratings often permit depth readings to as much as 206 fathoms over hard bottoms. Chart speed is continuously variable from 4 to 40 inches per hour, permitting as much as 200 hours continuous operation for cruising economy and precision net laying. Solid state electronics operate on any voltage from 10.5 to 45 VDC.

DE-741 Depth Recorder

Deep water performance with recording mechanism plus solid state electronics in a single cabinet. Total depth range of 1370 fathoms divided into 6 overlapping phases. Zero adjustment of −5 to +10 fathoms with front panel control. Exceptional sensitivity through automatic time varied gain with levels further set by range in use. Front panel control for fix mark and intensity controlled red chart illumination. Hinged and gasketed door permits notations to be made on chart. 0-720 fathoms range position and automatic "gain" selection allows unattended operation without loss of recordings over wide depth range and bottom conditions.

DE-740 Digital Depth Sounder

Four-segment advanced digital display for big ship operation. Depth range to 500 feet or 240 fathoms, selectable electronically with front panel switch. Built-in depth alarm adjustable in 1 foot or fathom increments to 300 feet. Automatic bottom tracking gate eliminates false readings from off-the-bottom objects. Adjustable edge-lighted panel illumination permits easy viewing under even brightest daylight conditions. Solid state electronics protected against marine environment.

JNA-105 LORAN A RECEIVER

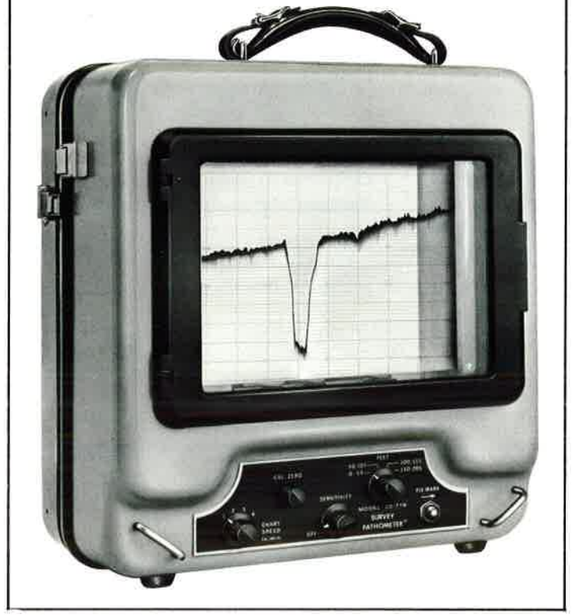
Specifically designed for deepwater merchant and fishing vessels. Receives all Loran A signals on 1850, 1900 and 1950 kHz permitting accurate fixes to a range of 1500 nautical miles. Signal is read out on digital display when correct CRT presentation is obtained. Information applies directly to Loran charts without conversion kits or tables. Accuracy in relative mode is 100 meters; long range fixes have accuracies to 0.2 nautical mile. Integrated circuits on plug-in boards simplify repair and reduce power drain to less than a 40-watt bulb.

NAVIMATIC ADF

Swift, automatic bearing fixes without 180° ambiguity. Receives on three bands: 190-420 kHz marine, aircraft and Consolan; 500-1400 kHz U.S. and Canadian commercial broadcast; 1400-3500 kHz intership and ship-to-shore. To operate, just tune to desired station then switch to ADF. Indicator reads out true or magnetic bearing to station. Five crystal controlled spotting positions built-in for commonly-used frequencies. Fixed antenna loops mount above deck, require no maintenance. Cabinet is rustproof aluminum for long service.

Survey Depth Sounders

Raytheon depth recorders are built to stand up under demanding survey use. Analog chart recorders with paper speeds to match any application, plus digital readout units —all implemented with reliable solid state electronics— all housed in rugged cast aluminum cabinets. These Fathometer® depth recorders are the quality standard for precise underwater mapping. They have been employed for oceanographic survey and bathymetric data recording, stratigraphic profiling and coastal sediment studies by government and industry. Applications requiring highly accurate, detailed permanent recordings of underwater topography.



DE-719 Depth Recorder

Portable Fathometer® recorder designed for survey accuracies of 0.5% ±1 inch. Transducer mount and rigging store in recorder case when not in use. Low power consumption, portability, ease of set-up, rugged construction make DE-719 ideal for small or large boat use. Circuitry is completely solid state, with magnetic keying to eliminate contact wear, and electronically controlled stylus speed. Tide and draft adjustment, water sound speed compensation, front panel fix mark, variable chart paper speed, plus many other features for superb performance and versatility.

DE-723D Depth Recorder

Designed for shoal water or ocean survey. Combines permanent analog recording with digital readout and drive circuitry for interface with external equipment. Interconnects with position-finding and digital recording equipment to provide permanent storage of depth and position data. Signal processing and bottom gate eliminate echoes from fish, debris or other off-the-bottom objects. 240 fathom total range divided into 6 overlapping phases with accuracy of ±3 inches to 100 feet, ±0.25% of indicated depth to maximum range. Acoustic transmission frequency is 90 kHz for optimum performance. Enclosure is splashproof and corrosion resistant.

Communications

Marine radiotelephones are a ship's only link to the outside world—for emergency, weather, and business communications. Raytheon phones are built to perform every time you need them. Advanced design, implemented with the latest solid state circuitry. Inspected and tested at every step in manufacture. Supported by dealers around the world. All Raytheon radiotelephones comply with FCC Part 83 regulations and are type accepted.

FM RADIOTELEPHONES

Almost 90% of all commercial vessels are now equipped with VHF/FM phones for intership and international port area communications. Raytheon premium quality, high reliability phones assure 2-way communications over VHF/FM ranges to 30 miles, unaffected by weather and atmospheric conditions.

RAY-50 FM Radiotelephone

Newest VHF/FM features twelve 2-way communication channels, plus reception of both 162.40 *and* 162.55 MHz continuous weather frequencies. "Sea Watch" circuit monitors channel 16 (safety) and any other channel simultaneously. Built in remote control and ringer capabilities. Meets all current and proposed FCC regulations. 25 watt output reducible to 1 watt with front panel switch. Supplied with 8 factory installed crystals for transmit/receive on channels 6, 16, and 26 plus reception of two weather channels. All solid state electronics on plug-in circuit boards for high reliability, ease of service. Compact cabinet, fully protected against marine environment.

RAY-45 FM Radiotelephone

High quality VHF/FM with 12 ½ channel coverage. Twelve 2-way communications channels, plus reception of the 162.55 MHz continuous weather frequency. Meets all current and proposed FCC regulations. 25 watt output can be reduced to 1 watt with front panel switch. Supplied with factory installed crystals for channels 6, 16, and 26 with pull-switch for weather reception. Extensive use of solid state circuitry for high reliability, minimal power drain. Packaging is exceptionally compact, thoroughly ruggedized and treated for the marine environment.

SSB RADIOTELEPHONES

When home port or destination is over the horizon, you get assured communications with Raytheon single sideband radiotelephones. Traditional Raytheon design and craftsmanship provide top performance in all modes with circuitry that gives more "talk power" and range per input watt. All Raytheon SSB phones are FCC type accepted for Parts 81 and 83.

RAY-1208 SSB Radiotelephone

Powerful 80 watt peak output enhances the increased intelligibility and high "talk power" advantages of single sideband operation. Six channels cover all high seas frequencies plus lower frequency intership service—with frequencies precisely maintained by crystals in temperature controlled ovens. Compatible AM mode is also provided for 2-3 MHz marine band. Circuitry is all solid state, except for transmitter output stages, for high reliability and lower power drain. Cabinetry is rugged rustproof aluminum and electronics are fully protected against the marine environment.

RAY-1275 A/B SSB Radiotelephone

Top commercial quality for big ship, deep water operations. Full 350 watt input power and wide frequency range insure reliable voice communications day or night anywhere in the world. 20 channels divided into 5 groups cover simplex or two-channel simplex communications on the 4, 8, 12, 16, and 22 MHz marine bands with the RAY-1275 A option; the RAY-1275 B option substitutes 6 MHz for 22 MHz coverage. Panel selectable modes include compatible AM and SSB. Designed specifically for heaviest commercial duty, cabinet is louvered aluminum covered with tough epoxy paint.

Specifications

$$.5\ \mu V\left(\frac{S+N}{N}\right)$$

$$\frac{S+N}{N} < 1.0$$

MODEL 1006-20X RADAR

ANTENNA	
Polarization	Vertical
Beamwidth	1.6° horiz., 21° vert.
Gain	29.5db
Horizontal Sidelobes	—30db
Rotation Speed	60 rpm
Bearing Resolution	1.6°
Dimensions	22″H, 6′ swing
Weight	130 lbs.
Rated Wind Load	100 kts.
INDICATOR	
PPI	10″ dia.
Operating Controls	Off-standby-on, tuning, FTC, STC, brilliance. range switch, heading line on-off, cursor rotation, marker intensity, gain, light dimmer.
Minimum Range	20 yds.
Maximum Range	48 n. mi.
Dimensions	16″H, 17″W, 25″D
Weight	56 lbs.

TRANSMITTER/RECEIVER							
Range Scale (n. mi.)	½	1½	3	6	12	24	48
Range Markers (n. mi.)	¼	¼	½	1	2	4	8
PRF (pps)	4000	4000	4000	2000	2000	2000	1000
Pulse Width (μsec.)	0.05	0.05	0.05	0.5	0.5	0.5	1.0
Average Power (watts)	4	4	4	20	20	20	20
Peak Power	20 kW						
Operating Frequency	9375 ±30 MHz (X-band)						
Receiver Noise Figure	11db						
Range Resolution	1% or 20 yds, whichever is greatest.						
Dimensions	24″H, 22″W, 12″D						
Weight	45 lbs.						

POWER CONVERTER	
System Requirements	700 watts, total
Operating Voltage	115 VAC ±20%, 60 Hz 110 VDC ±20% 24/32 VDC ±20%
Dimensions	24″H, 22″W, 12″D
Weight	75 lbs.

RADAR

ANTENNAS*

	10 cm	3 cm	
	12 feet	12 feet	6 feet
Polarization	Vertical	Vertical	Vertical
Beamwidth	2.0° horiz., 22° vert.	0.7° horiz., 22° vert.	1.5° horiz., 23° vert.
Gain	27db	31db	29db
Horizontal Sidelobes	—26db	—27db	—24db
Rotation Speed	27 rpm	27 rpm	27 rpm
Bearing Resolution	2.0°	0.7°	1.5°
Dimensions	38½″H, 13′ swing	26½″H, 13′ swing	17½″H, 6′ swing
Weight	290 lbs.	290 lbs.	70 lbs.
Rated Wind Load	150 kts.	150 kts.	150 kts.

INDICATORS	16 inch	12 inch
Operating Controls	Off-standby-on, gain, sea & rain clutter, range switch, marker intensity, video intensity, cursor rotation & intensity, pulse length selection, tuning, heading line on-off.	Off-standby-on, gain, sea & rain clutter, range switch, marker intensity, video intensity, cursor rotation & intensity, tuning, heading line on-off.
Minimum Range	50′	50′
Maximum Range	48 n. mi.	48 n. mi.
Dimensions	47½″H, 29½″W, 28″D	37⅞″H, 21⅝W″, 22⅝″D
Weight	217 lbs.	123½ lbs.

TRANSMITTER/RECEIVER	20 kW							45 kW							60 kW						
Range Scale (n. mi.)	½	1½	3	6	12	24	48	½	1½	3	6	12	24	48	½	1½	3	6	12	24	48
Range Markers (n. mi.)	¼	¼	½	1	2	4	8**	¼	¼	½	1	2	4	8**	¼	¼	½	1	2	4	8**
PRF (pps)	4000	4000	4000	1000	1000	1000	1000	4000	4000	4000	1000	1000	1000	1000	4000	4000	4000	1000	1000	1000	1000
Pulse Width (μsec.)	0.05	0.05	0.05	0.6	0.6	0.6	0.6	0.05	0.05	0.05	0.6	0.6	0.6	0.6	0.05	0.05	0.05	0.6	0.6	0.6	0.6
Average power (watts)	4	4	4	12	12	12	12	9	9	9	27	27	27	27	12	12	12	36	36	36	36
Operating frequency	9375 ± 30 MHz (X-band)							9375 ± 30 MHz (X-band)							3050 ± 25 MHz (S-band)						
Receiver Noise Figure	11db							10db							11db						
Range Resolution	50′							50′							50′						
Dimensions	23½″H, 18½″W, 11″D							29½″H, 20″W, 14½″D							29½″H, 20″W, 14½″D						
Weight	47 lbs.							80 lbs.							80 lbs.						

POWER CONVERTER			
System Requirements	1.5 kVA	2 kVA	2 kVA
Dimensions			
Rectifier	20″H, 17″W, 7″D	20″H, 17″W, 7″D	20″H, 17″W, 7″D
Rotary Converter	14″H, 17½″W, 12″D	14″H, 17½″W, 12″D	14″H, 17½″W, 12″D
Weight			
Rectifier	40 lbs.	40 lbs.	40 lbs.
Rotary Converter	194 lbs.	194 lbs.	194 lbs.

*Optional 9-foot antenna available. **Optional range marker continuously variable from 0 to 30 miles available.

DEPTH RECORDERS

	DE-719	DE-723D	DE-731	DE-735	DE-740	DE-741
DEPTH RANGE	Feet or meters: 0-55′, 0-16.5m 50-105′, 15-31.5m 100-155′, 30-41.5m 150-205′, 40-61.5m All ranges may be multiplied by 2 with range doubling switch.	Feet or fathoms: Phase A – 1-50 Phase B – 40-90 Phase C – 80-130 Phase D – 120-170 Phase E – 160-210* Phase F – 200-240* *not calibrated	Feet or fathoms: Phase 1 – 0-110 Phase 2 – 100-210 Phase 3 – 200-310 Phase 4 – 300-410	Feet or fathoms, single gear change and chart: Phase 1 – 0-168′, 0-56 fath. Phase 2 – 150-318′, 50-106 fath. Phase 3 – 300-468′, 100-156 fath. Phase 4 – 450-618′ not cal.	Digital readout in feet or fathoms: 1-500′ 0.2-240 fath.	Fathoms: Range 1 – 0-110 Range 2 – 100-210 Range 3 – 200-310 Range 4 – 300-410 Range 5 – 0-720 Range 6 – 650-1370
VOLTAGE, CURRENT	12 VDC Converter available for operation at 115/230 VAC 50-60 Hz.	118 VAC @ 100 VA 12 VDC 11 A 24 VDC @ 5.5 A	115 (or 220/240) VAC @ 40W, or 32 VDC @ 1.2A. 12 and 24 VDC adapters available.	12 VDC @ 10W 24/32 VDC @ 26.5W Kit available for 115 VAC	117V ±10% AC, 47-63 Hz @ 40 VA.	117 V ±10% AC, 60 Hz @ 50 VA.
SOUNDING RATE	534/min.	Feet – 60/min. Fath. – 100/min.	Feet – 270/min. Fath. – 45/min.	Feet – 166/min. Fath. – 83/min.	Feet – 276/min. Fath. – 45.6/min.	
FREQUENCY	200 kHz	90 kHz	40 kHz	125 kHz	90 kHz	24 kHz
ACCURACY	0.5% ± 1 inch	1-100′ – ±0.25′ recorder ±0.25% digital 100′-240 fath. – ±0.25% of depth	±1% adjustable with internal control.	±5%	1% ±0.1′ or fathom	±1% plus deviation from 60 Hz supply.
CHART ADVANCE SPEED	1, 2, 3, 4″/min.	1 or 2″/min.	4-40″/hr. continuously adjustable.	4-40″/hr. continuously adjustable.	—	6″/hr.
CHART ROLL LENGTH	60′ x 7″	60′ x 7″	60′ x 7″	60′ x 7″	—	60′ x 7″
DIMENSIONS	18″H, 15⅜″W, 9 1/16″D	Recorder – 15″H, 18⅞″W, 8⅞″D Electronics – 15 5/16″H, 19″W, 9¾″D Digital – 6¾″H, 9½″W, 6″D	19″H, 15½″W, 8½″D	16″H, 15½″W, 6½″D	Digital – 10¼″H, 9¾″W, 6½″D Electronics – 12″H, 15¾″W, 6¼″D	19″H, 15½″W, 8¾″D
WEIGHT	47 lbs. with transducer & rigging	Recorder – 55 lbs. Electronics – 77 lbs. Digital – 13 lbs.	40 lbs.	21 lbs.	Digital – 15 lbs. Electronics – 25 lbs.	40 lbs.
TRANSDUCER SUPPLIED	2445 AD	—	—	7041 thru-hull	7511	7426
TRANSDUCER OPTIONS	7245 narrow beam	Choice of: 723-53 skin mount 723-47 small boat 723-48 overside "fish."	Choice of: 7193 thru hull 7210 keel mount 7510 hull piercing	7041K keel mount @ extra cost.	—	7191B keel mount.

RADIOTELEPHONES

	RAY-45 VHF/FM	RAY-50 VHF/FM	RAY-1208 SSB	RAY-1275A/B SSB
FREQUENCY RANGE				
Transmitter	156.275-157.425 MHz as above, also 161.600-162.550 MHz	156.275-157.425 MHz as above, also 161.300-162.550 MHz	Factory programmed for: Chan. 1 – 2-3.5 MHz A3j Chan. 2 – 2-3.5 MHz A3h Chan. 3 – 2-3.5 MHz A3h & A3a Chan. 4 – 4.05-6.53 MHz A3h & A3a Chan. 5 – 6.2-8.28 MHz A3j Chan. 6 – 6.2-8.28 MHz A3h & A3a	Rec. & transmit 4050-4150 kHz 6200-6460 kHz* 8180-8280 kHz 12,325-12,425 kHz 16,460-16,560 kHz 22,000-22,100 kHz** *RAY-1275B only Rec. only 4350-4450 kHz 6200-6460 kHz* 8725-8825 kHz 13,120-13,220 kHz 17,275-17,375 kHz 22,650-22,750 kHz** **RAY-1275A only
Receiver				
CHANNELS				
Transmit	12	12	6	20
Receive	13	14		
FREQUENCY CONTROL	Yes	Yes	Yes, in ovens	Yes, in ovens
Quartz Crystals				
FREQUENCY STABILITY	<±10 ppm	<±10 ppm	±20 Hz	±20 Hz
SIZE/WEIGHT				
Radiotelephone	3⅞″H, 11″W, 13½″D; 10 lbs.	4½″H, 12″W, 12″D; 8 lbs.	4″H, 12″W, 16⅞″D	20¼″H, 16⅜″W, 9¾″D; 51 lbs.
Power Supply	—	—	Built-in	7″H, 9″W, 14¼″D; 33 lbs.
POWER OUTPUT	25W*	25W*	80W, p.e.p.	High 200W, p.e.p. Low 150W, p.e.p.
OPERATING VOLTAGE	12.6 VDC	12.6 VDC**	12 VDC (13.6 nom.)***	117V, 50-60 Hz AC
POWER REQUIREMENTS				
Receive	0.12A	0.5A	0.8A	150W
Transmit (standby)	1.2A	—	—	175W average
Transmit (modulated)	9.6A	7.0A	15.0A (voice peaks)	500W average
MODES OF OPERATION	PM 16F3	PM 16F3	A3h, A3a, A3j Upper sideband only	A3h, A3a, A3j Upper sideband only
RECEIVER SENSITIVITY	1.0 μV for 20db quieting	0.5 μV for 20 db quieting	1 μV for 10db S+N/N ratio	<1 μV for 10db S+N/N ratio
SQUELCH, NOISE LIMITER	Yes	Yes	—	—
SELECTIVITY	EIA at least 50db adjacent channel	EIA at least 80db adjacent channel	6db @ 3 kHz, 60db @ 6 kHz	6db @ 2.8 kHz, 60db @ 5 kHz
AUDIO OUTPUT	2.5W	3W	6W	2W
DUAL CHANNEL MONITOR	No	Yes	—	—
VOX	—	—	No, p-t-t operation	Yes, also p-t-t operation
SELECTIVE RINGING	No	Yes	No	Available as accessory
CIRCUIT FEATURES	—	—	AGC, clarifier control, separate volume and rf sensitivity controls.	Automatic carrier and audio level control. Separate volume and rf sensitivity controls.
EQUIPMENT SUPPLIED	Crystals for channels 6, 16 and 26	Crystals for channels 6, 16 and 26	—	—
FCC TYPE ACCEPTED	Yes	—	Yes	Yes
REMOTE CONTROL	No	Yes	—	—

*Reducible to 1 watt or less **Auxiliary power supplies for other voltages available. ***Can operate on 24, 32 VDC or 117 VAC with accessory inverter.

JNA-105 LORAN

FREQUENCIES	Channel 1: 1950 kHz Channel 2: 1850 kHz Channel 3: 1900 kHz
RECEIVER TYPE	Superheterodyne, 550 kHz IF
SENSITIVITY	Less than 1 μV
SIGNAL GAIN	More than 90 db
RECEIVING BANDWIDTH	38 kHz for all channels
DELAY RANGE	0000-9999 μsec
MEASURING ACCURACY	$\pm$0.5 μsec
SYNCHRONIZATION	Automatic: AFC Manual: Drift
LEFT-RIGHT DELAY	Operate 1: + 10 msec/sec Operate 2: +500 μsec/sec Operate 3: + 5 μsec/sec
OPERATING VOLTAGES	12, 24 VDC
POWER REQUIREMENTS	40 VA
SIZE/WEIGHT	11¾"H, 7½"W, 17⅜"D/25 lbs.
***ANTENNA INPUT**	Whip or vertically mounted single wire 25 to 75'. Coupler is built-in.

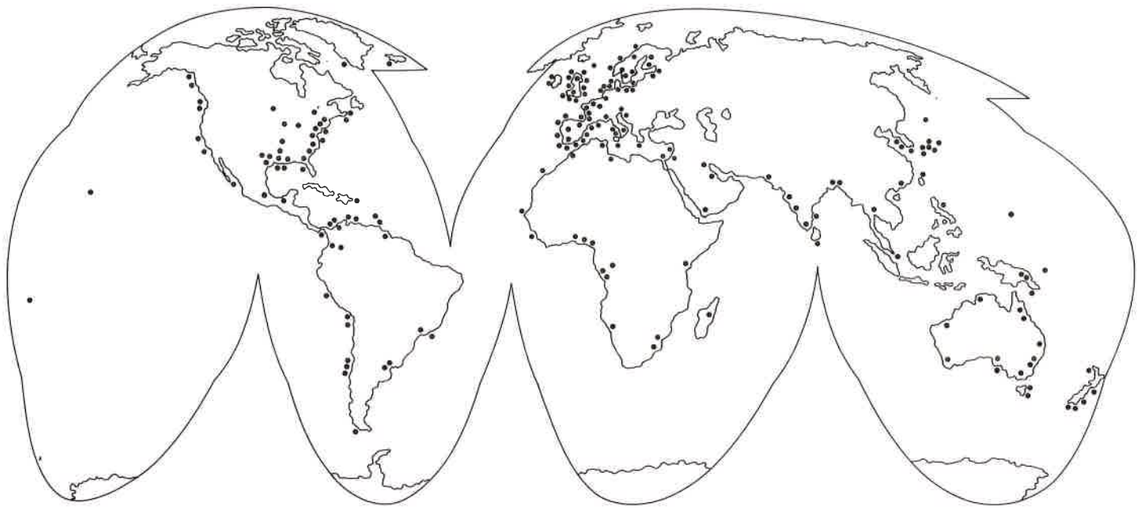
NAVIMATIC ADF

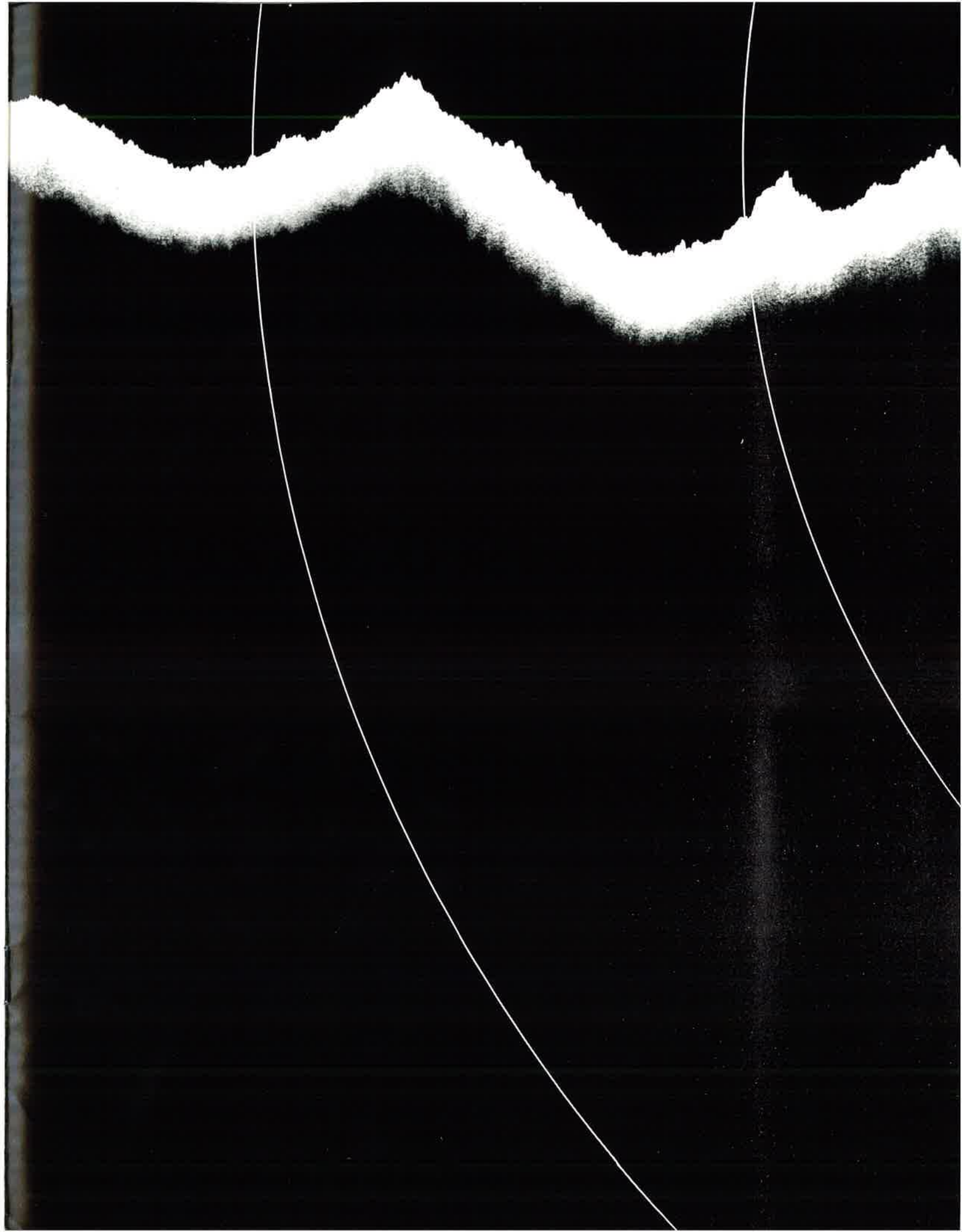
BANDS	3
FREQ. RANGES	DF/Receiver 190-420 kHz beacon, marine, aircraft 500-1400 kHz standard broadcast 1400-3500 kHz intership, telephone
FREQ. CONTROL	Tunable 3 bands plus 5 crystal controlled marker channels in SW or beacon ranges.
ANTENNA	Two fixed loops, spaced 90°, non-rotating
ABSOLUTE COMPASS SENSITIVITY	18μV/meter, beacon band 15μV/meter, broadcast band 10 μV/meter, marine band
BEARING ACCURACY, ADF	$\pm$3° for 35 μV/meter signal at antenna thru range of 190-3500 kHz
SENSITIVITY	More than 18μV/meter in all bands for S/N of 6db
BEAT OSCILLATOR	Yes
AUDIO OUTPUT	3 watts
VOLTAGE, CURRENT	12, 24, or 32 VDC @ not more than 1.5A. Accessory supply available for 115 VAC operation.
SIZE/WEIGHT	Console: 5½"H, 10½"W, 12¼"D Loop: 13¾"D, 18"H Indicator: 5½"H, 10½"W, 3"D
EQUIPMENT FURNISHED	Radio receiver, radio compass indicator/speaker unit, 25' interconnect cable (loop to indicator/speaker), 10' interconnect cable (indicator/speaker to console).

Service

Anywhere you sail, more than 200 Raytheon Service Centers and authorized dealers are no more than a phone call away. Throughout the U.S. and in major ports on every continent skilled technicians with a full stock of spare parts await your needs. For regular preventive maintenance or emergency repair, you can rely on Raytheon.

For more information, including price and delivery, contact Raytheon Company, Marine Products Operation, Manchester, New Hampshire 03103. Telephone 603-668-1600.





VINYL-CLAD
MARINE MESH
Plastic Coated Woven or Welded Wire

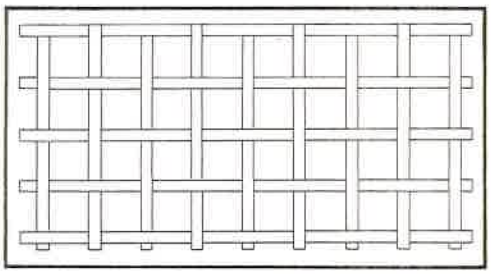
FACT SHEET ON VINYL-CLAD,
A THICK TOUGH VINYL COATING BONDED TO GALVANIZED STEEL WIRE

Vinyl-Clad MARINE MESH is a family of plastic coated steel wire fabrics specifically designed to combine the high structural strength of steel wire and the outstanding durability of a high molecular weight polyvinyl chloride plastic.

In the extremely demanding marine environment Vinyl-Clad works with you, not against you. In either fresh or salt water Vinyl-Clad shrugs off conditions which would quickly destroy other materials. As long as the coating remains undamaged, the mesh will last indefinitely. And it's easily formed into virtually any shape from a lobster trap to a fish weir.

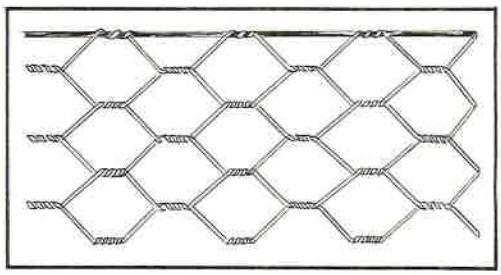
Proved in marine use for more than five years, Vinyl-Clad MARINE MESH is light weight and resists punishing abuse. The tough vinyl coating permanently bonded to the steel has high tensile strength and elongation, excellent impact resistance and flexibility. It is totally unaffected by temperatures as low as —30°F. and as high as 150°F.

Steel and plastic. The best of both. That's what you'll say when you try Vinyl-Clad MARINE MESH. Start now. Check the table of physical properties and the typical applications on the next page. Then order a roll of the type of Vinyl-Clad best for your application — woven, welded or hexagon netting. You'll be pleasantly surprised at the low cost. Inexpensive fabrication tool and corrosion resistant clips are available too.



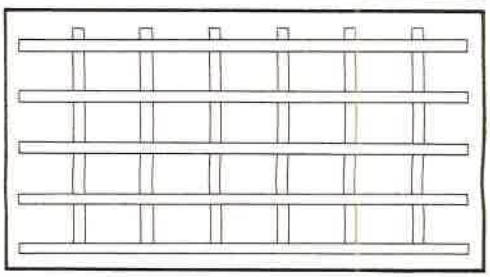
WOVEN WIRE CLOTH

- Standard Wire Size — .020" to .105" diameters
- Widths — 12 inches to 72 inches
- Standard length roll is 100 lineal feet. Other lengths on request.



HEXAGON WIRE NETTING

- Standard Wire Size — 20, 18, 16 gauge
- Widths — 24 inches to 72 inches
- Standard length roll is 150 lineal feet. Other lengths on request.



WELDED WIRE MESH

- Standard Wire Size — .041" to .120" diameters
- Widths — 12 inches to 72 inches
- Standard length roll is 100 lineal feet. Other lengths on request.

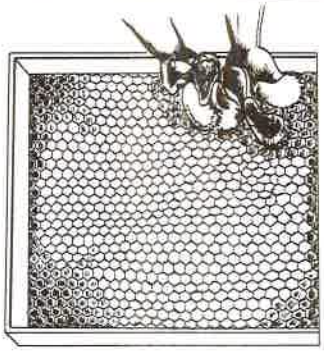
EACH STYLE IS AVAILABLE IN A VARIETY OF MESH OPENINGS

QUALITY G&B WIRE PRODUCTS

GILBERT & BENNETT MFG. CO., INC.

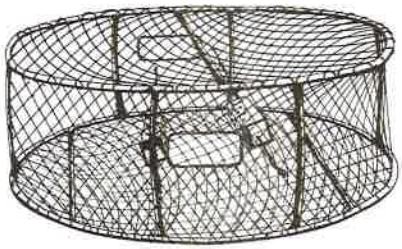
Georgetown, Conn. 06829, Phone: (203) 544-8323 Blue Island, Ill. 60406, Phone: (312) 233-0100

Oyster tray

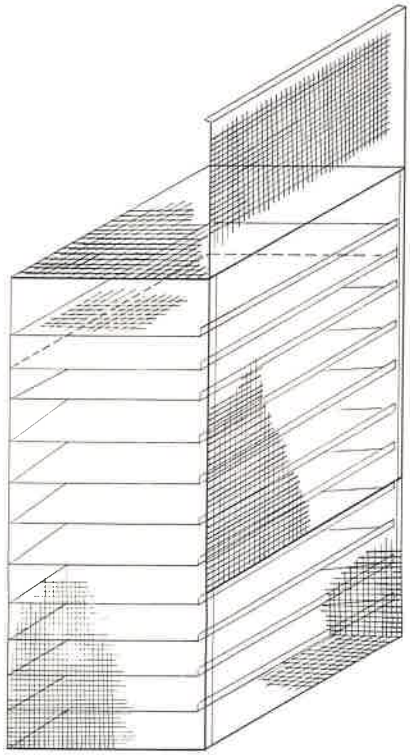


Lobster trap

Crab trap



Oyster growing cage



These are only a few of the current applications of Vinyl-Clad Marine Mesh. There are many more — some quite unique. Why don't you try it. Could be the solution to your problem.

PHYSICAL PROPERTIES OF THE VINYL-CLAD COATING

Tensile Strength, psi	1900	ASTM D638
Elongation, %	300	D638
Hardness, Durometer	70 Shore A	—
Water Absorbtion rate	0.40	D570

Temperature Range	Continuous —30°F to 150°F	—
Dielectric Strength volts/mil	400	D149
Burning rate	Self-extinguishing	D635

DISTRIBUTED BY:

Form 69-95

QUALITY G&B WIRE PRODUCTS
EST. 1818

The GILBERT & BENNETT MFG. CO.

WOVEN Wire Fabrics WELDED

GEORGETOWN, CONN. 06829
TEL: 203/544-8323
TWX: 710-460-2396

November 28, 1972

Mr. David Littleton-Taylor
R.F.D. #1
Monroe, Maine 04951

Dear Mr. Taylor:

In reference to your request of November 21st, we are enclosing our catalog sheet on Vinyl Clad Marine Mesh.

We do not have any additional literature available except for a Newswire we published several years ago. We are enclosing the Newswire as it may be of some interest to you.

We appreciate your interest in Gilbert & Bennett products.

Very truly yours,

Janice Littleton

(Mrs.) Janice L. West
Sales Department
mtb

GILBERT & BENNETT NEWSWIRE

Reporting on new developments in quality wire products

Crew member holds up two 15-pound lobsters captured on a set.

Gilbert & Bennett in on the ocean floor of new industry

Every morning the in-shore lobster man eases out of bed, slips into his faded dungarees, checks his familiar equipment and, weather permitting, makes his way to his string of wooden lobster pots lying under one to twenty fathoms of salt water. Usually working alone in a small boat, he hauls, empties, baits, and resets the traps -- usually from 50 to 150 of them. Working these pots, which have not substantially changed in design for more than 100 years, the lobster fisherman returns from his toils each night with from about 1/2 to 2 1/2 lbs. of lobsters per trap.

This is the way it has been since in-shore lobstering became a commercial business in the late 1700's. This is the way it might have remained because most lobstermen exhibit a powerful resistance to change -- but -- change is overtaking the industry.

Starting about 10 years ago, off-shore fishermen began to "harvest" lobsters by trawling for them. These deep-water fishermen -- they fish as deep as 300 fathoms -- raised almost 10 million lbs. of lobsters during the 2-year period, 1964 - 1966.

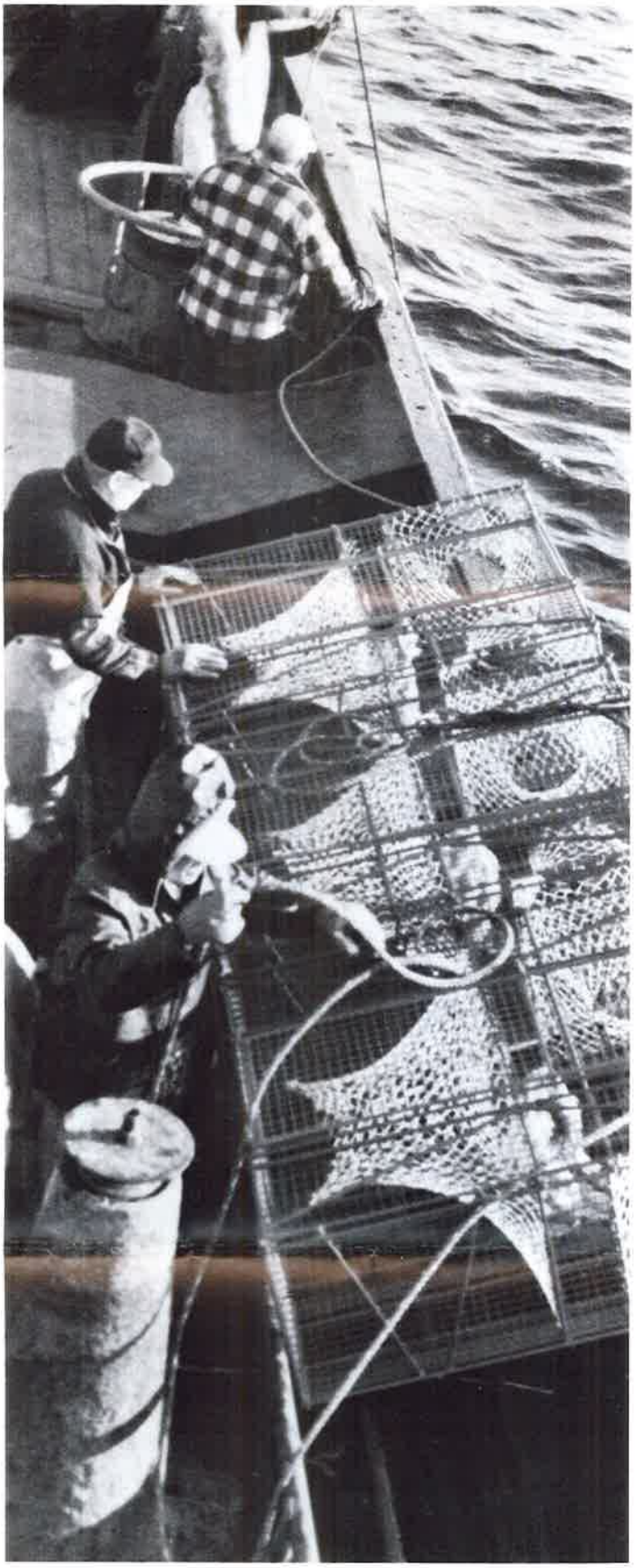
Trawling, however, has its drawbacks. For one thing, fewer of the smaller, premium-priced lobsters are caught and excessive damage to the lobsters occurs while trawling. Also, many of the lobsters inhabit areas of "hard bottom" where boulders and coral growths damage

nets and gear. Another method had to be found for harvesting deep-water off-shore lobsters; and this new method uses vinyl-coated steel lobster pots designed and manufactured for off-shore lobstering by Coatings Engineering Corporation, South Natick, Massachusetts.

Among the reasons steel was selected for the off-shore pots was that the natural buoyancy of the wooden models made them difficult to anchor in the 50 to 300 fathom waters being fished. The strength-to-weight characteristics of wood require designs using large members which offer great resistance to the water, with the result that they are easily moved about by tides on the bottom and are difficult to haul up from the greater depths fished. The wooden traps were also too fragile to be handled aboard the highly mechanized vessels used in off-shore fishing.

In early trials using steel traps, technicians working for the United States Bureau of Commercial Fisheries found that rust could damage the nylon netting used inside the traps. They also found that there was no satisfactory and economical way to fasten wire fabrics to the steel frames, and the steel frames themselves rusted rapidly.

These problems -- rapid deterioration by rusting and fastening of the wire fabric were eliminated by a tough skin of polyvinyl chloride applied to the completed steel traps. Polyvinyl chloride (PVC) is a tough plastic that is resistant to water, weathering, salt, oils, abrasion, and all common corrosive chemicals. Of the many styles of steel pots tested, the most suitable model found so far has inside measurements 48 inches long, 36 inches wide and 18 inches high. The trap is framed of press-welded 3/8" hard drawn steel rods. The frame is covered with 12 1/2 gauge welded wire fabric with openings 1 inch square. The fabric is galvanized and is attached to the frame by press welding. After assembly, the entire trap is immersed in a PVC compound formulated by Coatings Engineering Corporation. The PVC forms a skin of plastic approximately 1/8" thick. In addition to its ability to resist the elements, the PVC improves the structural integrity of the pot by helping to bond the welded wire fabric securely to the frame, which makes the trap very resistant to the rough handling invariably encountered aboard ship. When



Traps baited and ready to go over the side; crew members stand by for this set.

A confusion of cable, booms, winches and blocks are necessary for handling the big traps.

completed, the trap weighs about 138 lbs. and costs about $100.00.

In addition to solving the problems of damage to the lobsters, and trawling gear, as well as furthering the exploitation of new areas, other benefits of trapping over trawling are lower operating costs and vessel power requirements. Further, an increase in lobster production from off-shore areas will reduce the competition for, and the fishing pressure on, the currently producing stocks and, an increase in lobster production will stimulate an expansion of the potential United States market for live lobsters.

The vinyl-coated steel off-shore lobster pot method of harvesting will instill new life into the lobster fishing industry by making it big business. There is a much larger investment in equipment being used for deep-water lobster fishing. The in-shore lobster fisherman uses anything from an 8 ft. punt to a 40 ft. wooden boat to travel several miles a day to and from the fishing area, and his traps cost from 5 to 10 dollars each. The off-shore vessels are usually in excess of 100' in length. They are equipped with radar to locate the trap buoys during poor weather conditions, loran to relocate the best fishing spots and electronic sounding equipment to record conditions on the ocean bottom.

In addition to the investment in ships, traps, and other gear, the off-shore lobsterman has a bigger investment in man power than an in-shore lobsterman. A seven-man crew staying at sea for a week or ten days is generally used for off-shore lobster fishing. However, the potential returns from off-shore lobstering make the increased investment well worth the gamble.

Off-shore lobstermen string some 10 to 30 pots per line. The traps are attached to steel cables 100 to 350 fathoms long, depending on the area fished, and they are pulled every 24 to 48 hours. Off-shore lobstermen have caught in excess of 30 lbs. in a single pot. An average catch of 5 -

Large lobster trapped in the parlor of this pot represents about $10.00 at dockside.

Red crabs are often caught; they may prove profitable adjunct to lobster pot fishing. Rock crabs are taken in shallower waters.

10 lbs. per pot per day from a 200 pot set would make a profitable industry, some experts say. The working hours are very different for the off-shore lobster fisherman. He stays on his vessel for a week or ten days, taking as long as a day to get to the fishing grounds and a day to get back. In contrast, the in-shore lobster fisherman is on shore every evening. In a two-day, off-season set, an in-shore lobsterman is doing well if he averages 1/2 lb. to 1 lb. a pot. During the most productive season he might average as high as 2 or 2 1/2 lbs. a pot. His pots -- wooden framed -- and measuring approximately 3' x 2' x 1' -- are strung singly or occasionally in groups of 4 to 6. Most in-shore lobster fishermen fish within sight of shore with pots on a line from 50 to 150 ft. long.

Coatings Engineering Corporation's involvement with the off-shore lobster fishing industry was a natural outgrowth of 10 years experience with in-shore lobster fishing. Ten years ago, Gilbert & Bennett plastic coated wire fabrics were introduced to the in-shore lobster fisherman by Coatings Engineering. The in-shore lobster fishermen nail the G & B vinyl coated welded wire fabric over their wooden-framed traps in place of oak laths which had previously been used. During the past 5 years, sales records indicate that about 300,000 in-shore traps have been covered with G & B vinyl clad fabrics.

These welded wire fabrics, produced on automatic machines developed and built to G & B specifications, and coated by Coatings Engineering Corporation, find uses in many other industries. Typical of these are the chicken and egg producing industry, mink ranching, and innumerable other applications where resistance to corrosion and chemical attack is important.

Coatings Engineering Corporation, a Subsidiary of the Gilbert & Bennett Mfg. Co., has a continuing interest in the lobster fishing industry and has produced a number of new lobster pot designs which are now being tested. All of these designs use the G & B wire fabrics and CECOFLEX* coatings manufactured by Coatings Engineering Corporation.

*TM
**Cruise 68-3 March 11 - April 5, 1968

CREDITS

Photographs taken during a cooperative participation cruise**aboard the United States Bureau of Commercial Fisheries Motor Vessel DELAWARE operated by the Exploratory and Gear Research Base at Gloucester, Massachusetts.

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Canadian Patent No. 792981 other countries pending

American installation

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